The Politics of Post-Industrial Cultural Knowledge Work

René Stettler

A thesis submitted to the University of Plymouth in partial fulfilment for the degree of

Doctor of Philosophy

School of Art and Media
Faculty of Arts

April 2011

Copyright Statement

This copy of the thesis has been supplied on condition that anyone who consults it is understood to recognise that its copyright rests with its author and that no quotation from the thesis and no information derived from it may be published without the author's prior consent.

Executive Summary

This dissertation conducts in-depth inquiries into the practices, nature and theory of post-industrial cultural work and the humanities- and arts-based civic dialogues which cultural work promotes. Given the broad neglect of utopian thinking in the mainstream of critical social science and in an attempt to sketch out a vision of an alternative future, the aim of this thesis is to outline an "epistemology" for post-industrial cultural work as well as to reflect upon the outlook for educational cultural work practices and their function as a catalyst for civic dialogue and cultural change. The main concerns are the signification, interests and aims embodied in cultural production touching on issues of cultural and scientific learning, alternative modes of democratic governance of science and technology (Felt, Wynne et al. 2007), industrial society's logic of accumulation and market rationality, the primacy of contemporary instrumental and capitalist values, neoliberalism, globalization and cosmopolitanism.

With a view to addressing elementary questions regarding the future of cultural work, which are explored and theorised alongside future perspectives of a new form of *knowledge work* for the humanities and the arts, the actual challenges of cultural work are considered from within the wider context of the risk society (Beck 1986) and the threats which affect everybody today. In relying on Beck's (2009) conceptualization of the world risk society as a "non-knowledge society" characterised by the global existence of incalculable risks/threats and non-knowing, the thesis addresses the problem of non-knowledge and unrecognised contingencies as a challenge for cultural work to design processes of (un)learning in civic dialogues.

In exploring the social, cultural and political relevance of three empirical case studies, the thesis ventures into the prospects of a new socio-epistemological perspective for cultural work and workspaces for knowledge. The studies investigate three different (techno-)socio-cultural spaces of knowledge: a public exhibition about the new Gotthard Base Tunnel currently under construction in the Swiss Alps, Jennifer Baichwal's film *Manufactured Landscapes* (2006) about the Canadian photographer Edward Burtynsky and China's industrial revolution, and the living intervention *Fairytale* at Documenta 12, 2007, which brought 1,001 Chinese citizens to Kassel, Germany. Actor-Network Theory (ANT) is employed as a tool for the analysis of the material-semiotic properties of differing knowledges, the heterogeneous relations of socio-economic networks, and the global and uncertain conditions of the post-industrial world in which cultural work is embedded.

What is colloquially referred to as post-industrial *cultural knowledge work* in this thesis is elaborated in the context of a propositional socio-epistemological second-order framework (Von Foerster 1984; Pakman 2003) for cultural work and its entanglements with ethics, aesthetics, pragmatics, politics—and biopolitical production (Hardt and Negri 2000; 2009). In order to build "third spaces" of knowledge (Turnbull 2000) and to nurture uncertainty-oriented approaches and contingencies, the findings propose the development of more open, (self-)reflexive and anticipating forms of thinking and acting in cultural production fields with the aim to catalyse societal developments, to foster intrinsic values and to create cultural workplace identities with a moral-ecological-political awareness (cf. Banks 2006; 2007) invoking new interactions between viewers, audiences and the environment.

Acknowledgments

I owe a great debt to many individuals who helped make this thesis possible. First, I am grateful to Roy Ascott who provided enormous amounts of encouragement, support and guidance throughout my Ph.D and helped me to move on in times of unforeseen difficulties. I thank in particular David McMullan and David Turnbull who both responded unfailingly to requests for assistance. David Turnbull's book *Masons, Tricksters and Cartographers* opened the door to an understanding of our differing ways of producing knowledge and the ways knowledge practices work today.

The explorative atmosphere of my sessions with the Planetary Collegium helped me to acquire important insights into and understandings of research in cultural work practices and their role in the humanities and the arts as producers of valuable knowledge and defenders of civilization, and made the development of this thesis possible, for which I am very much indebted. I am grateful to my colleagues at the Planetary Collegium, including Elif Ayiter, Laura Beloff, Isabelle Chonière, Margaret Dolinsky, Maia Engeli, Norbert Herber, Margarete Jahrmann, David McConville, Christina Miranda, Francesco Monico, James Moore, Shaun Murray, Kjell Yngve Petersen, Nicolas Reeves, Yakov Sharir, Diana Slattery, Karin Søndergaard, Natasha Vita-More and Claudia Westermann. Their feedback on my research was an important part of the ongoing development of my thesis.

I am especially grateful for conversations with Martha Blassnig, Margarete Jahrmann and David McConville during and beyond the sessions of the Planetary Collegium. I particularly thank Michael Punt and Mike Phillips who with their knowledge, experience and creative thinking have helped shape my thesis and vision. I am indebted to Christina Ljungberg who gave me valuable insights into other research fields and played a critical role in the early stages of this Ph.D. I thank Christina for her great help and generous support that I have received during discussions about the topic of my research and papers that I have written. I want to offer very special thanks to David Matley for the critical and meticulous reading of the entire dissertation. The many hours David spent reading my text are reflected, I believe, in a substantially improved final version.

I am deeply grateful to a large number of people for conversations about science, philosophy and ecology. They include in alphabetical order, Simon Berther, Reinhold Bertlmann, Dick Bierman, Rainer Blatt, Charlotte and Josef Brandenberg, Fritjof Capra, Ulrich Claessen, Lüder Deecke, Ruth Durrer, Hans-Peter Dürr, Lilly Fellmann, David Finkelstein, Hanspeter Fischer, Ernst von Glasersfeld, Christine and Walter Graf, Giselher Guttmann, Stuart Hameroff, John Horgan, Brian Josephson, Kevin W. Kelley and Rachel Bagby, Ursula and Herbert Kneubühl, Christian Thomas Kohl, Gerhard Johann Lischka, Pier Luigi Luisi, Luis Eduardo Luna, Josef Mitterer, Sir Roger Penrose, Jack Pettigrew, Robert Poole, Karl Pribram, Peter Schulz, Benny Shanon, Abner Shimony, Uli Sigg, Henry Stapp, Andrea Steimer, Axel Vogelsang, Franz Vollenweider, Monica von Rosen, Peter Weibel, Margaret Wertheim and Judith Wyrsch. My gratitude to these people, who I either invited to the Swiss Biennial

on Science, Technics and Aesthetics as speakers or who supported the Biennial in various ways, cannot be adequately expressed. In many of the Biennials I had the opportunity to exchange ideas about the nature of life, civilization, consciousness, social reality, technology and culture, and other issues with these people. I am grateful for these dialogues and stimulating conversations and the great acquaintances, individuals, colleagues and friends that I have met during the past 20 years. They have supported and encouraged me to pursue and develop new concepts and ideas for new conferences, meetings and projects. Many of these ideas are articulated in this thesis.

I am especially indebted to Otto E. Rössler for many inspiring conversations and feedbacks of various kinds. I am also indebted to Irena Banjkovec who encouraged me to write this Ph.D and supported me in the rather difficult early stages of my research. I am indebted to Markus Allemann, Andy Athanassoglou, Muriel Bonnardin Wethmar, Marcel Brenninkmeijer, Roland Meyer, Kumi Naidoo, Alejandro Roquero, Kaspar Schuler Verena Vanoli, and Verena Weiss for numerous enriching discussions about issues of sustainability, ecology and green politics. I owe thanks above all to Ana Iribas Rudín for many conversations in the spirit of simplicity and heartfelt wisdom.

I am especially grateful to Guy André Mayor and Beny von Moos, who both passed away a few years ago, for challenging philosophical discussions about science, art, culture, mind and life. They both recurrently encouraged me to explore the epistemological and political dimensions of cultural projects, practices, institutions and people as producers and mediators of knowledge in order to make sense of a deeper social, moral and epistemological understanding of post-industrial culture.

And finally, I want to mention my son Pablo, my sisters Gabriela and Karin and their husbands René and Beat, and my parents Heidi and Karl, who both passed away not so long ago. My family has supported my efforts in many helpful ways and I thank my son, my sisters and my parents for entrusting me with their knowledge, experiences and insights into life domains with which I am not so familiar.

Lucerne, Switzerland, April 2011

Note on Terminology

The key theme of this dissertation is the explorations into the potential for a renaissance of *cultural work* and *knowledge* in the global cultural economy. Throughout, the emphasis of this thesis is on a particular kind of creative cultural labour that links knowledge and cultural work practice which I will colloquially call "cultural knowledge work". While I will define the cultural work and cultural workers I am concerned with in the Introduction, I will set "cultural work" and "cultural knowledge work" in quotation marks in various parts of my text. When "cultural work" is placed between quotation marks, I have reservations about the prevailing practices of cultural work and the function and meaning of cultural work as defined in prevailing theories. "Cultural work" can then be associated with a more open and progressive concept of cultural production and the practice of cultural work. "Cultural knowledge work" is mostly set in quotation marks in the first part of my text, and in chapters 3, 4 and 5, I use the italicised version of *cultural knowledge work* without quotation marks. *Cultural knowledge work* is a propositional concept that by definition is investigated in this thesis with regard to the epistemic features of cultural work, and the "epistemology"/ecology of the cultural labour process.

Another focus of this research is concerned with the reconceptualization of what I recurrently refer to as (techno-)socio-cultural spaces of knowledge. When *techno* is bracketed*, (techno-)socio-cultural* makes a reference to the kinds of cultural, epistemological and political spaces that we construct in the process of targeting audiences with collective matters-of-concern which are framed by the complex socio-economic-technological (post-industrial) reality that we inhabit. When *techno* is *not* bracketed, *techno-socio-cultural* refers more precisely to the systematization and dissemination of knowledge in spaces/places in which the cultural performance and reproduction of technoscience are particular issues (such as the Gotthard Base Tunnel exhibition project; see chapter 2.1 *Building a Transalpine Railway Tunnel and Manufacturing a Public and Transient Cultural Space of Knowledge [Case Study 1]*).

The humanities and the arts (the term used throughout my text) are in this thesis associated with a form of knowledge production in contemporary society. Their scope is broad, concerned with diverse social, cultural and analytical practices which accomplish inherently reflexive and often contemplative tasks—a complex of primarily critical or speculative ideas, methods/disciplines, values, intellectual and social demands as distinguished from the mainly empirical approaches of the natural and social sciences as well as science and technology. In this context, the *humanities- and arts-based dialogues* imply the diffusion of knowledge of this kind as well as the provision of material-semiotic responses to socio-technological and political post-industrial reality in cultural environments.

Declaration

At no time during the registration for the degree of Doctor of Philosophy has the author been registered for any other university award. The research in the following text and in the case studies was conceptualised and conducted by the author.

During and before the course of research, the author published numerous books and papers on research and topics in relation to science, technology, philosophy and epistemology. The author also presented his research in lectures at various institutions and conferences. In 1994 the author founded the *Swiss Biennial on Science, Technics and Aesthetics* which he has organised eight times since its inception. As a lecturer at the Lucerne University of Applied Sciences and Arts the author supervised and examined many Bachelor and Master research theses.

Books

Interventionen: Vertikale und Horizontale Grenzüberschreitung (1997). Co-authored with Otto E. Rössler. Basel, Frankfurt a. M.: Stroemfeld Verlag; Neue Galerie Luzern (Ed.).

Editor of:

Zu einer neuen Quantenphysik des Bewusstseins – Gespräche an den Grenzen der Erkenntnis (2009). Authors: Ascott, R.; Bertlmann, R.; Gabriel, U.; Von Glasersfeld, E.; Hameroff, S.; Luna, E.; Mitterer, J.; Penrose, R.; Rössler, O. E.; Weibel, P.; Zeilinger, A. Lucerne: Edition Neue Galerie Luzern.

Aussenwelt – Innenwelt – Überwelt (1997). Authors: Rössler, O. E.; Weibel, P. Basel, Frankfurt a. M.: Stroemfeld Verlag.

Engagement: Jetzt und Hier (1997). Authors: Weibel, P.; Lischka, G. J. Basel, Frankfurt a. M.: Stroemfeld Verlag.

Kunst und Technik (1997). Author: Kittler, F.; Basel, Frankfurt a. M.: Stroemfeld Verlag.

Interventionen (1993). Ein Gespräch mit Vilém Flusser und Gerhard Johann Lischka. Dierikon: Neue Galerie Schlössli Götzental.

Essays

Preface (in German). In: *Zu einer neuen Quantenphysik des Bewusstseins – Gespräche an den Grenzen der Erkenntnis* (2009). Stettler, R. (Ed.). Authors: Ascott, R.; Bertlmann, R.; Gabriel, U.; Von Glasersfeld, E.; Hameroff, S.; Luna, E.; Mitterer, J.; Penrose, R.; Rössler, O. E.; Weibel, P.; Zeilinger, A. Lucerne: Edition Neue Galerie Luzern. pp. 9-19.

Is There an Ecosemiotic Perspective for Today's Heterogeneous Knowledges in the Global Culture Industry? (2009). In: Ascott, R.; Bast, G.; Fiel, W.; Jahrmann, M.; Schnell, R. (Eds.) *New Realities: Being Syncretic.* Vienna, New York: Springer. pp. 276-79.

Discovering the Same in the Other: On the Role of Consciousness and Visual Analogy in Verena Vanoli's Multimedia Installation "Can You Hear the Grass Grow?" (2008). Private edition of the artist.

Reframing Semiotic Telematic Knowledge Spaces, and the Anthropological Challenge to Designing Interhuman Relations (2008). *Technoetic Arts,* 6/2. pp. 163-70.

The Incomplete Transparency and Reproducibility of Phenomena—On the Epistemology of Alois Lichtsteiner's Birch and Mountain Paintings (2007). In: *Alois Lichtsteiner* (Monograph). Bern: Verlag Kornfeld. pp. 82-86.

Perception—Translation—Transformation (2005). In: *ArtistsinLabs. Processes of Inquiry.* Vienna, New York: Springer. pp. 36-42.

Mind, Matter, and Quantum Mechanics: Towards a New Conceptual Theoretical Framework (2005). *Technoetic Arts,* 3/2. pp. 125-32.

Transcripts

Die Ausdifferenzierung des Kunstsystems (1994). Gespräch mit Niklas Luhmann (Lischka, G. J., Ed.). Bern: Benteli Verlag.

Die Illusion und die Virtualität (1994). Gespräch mit Jean Baudrillard (Lischka, G. J., Ed.). Bern: Benteli Verlag.

Medien = Kultur? (1994). Gespräch mit Siegfried J. Schmidt (Lischka, G. J., Ed.). Bern: Benteli Verlag.

Curated Conferences, Talks and Exhibitions

Das lebende Unternehmen: Ein systemischer Ansatz zu Change Management und Leadership, Talk by Fritjof Capra, D4 Business Center and Technopark Lucerne; 18 January 2010.

The Large, the Small and the Human Mind, The 8th Swiss Biennial on Science, Technics + Aesthetics, Swiss Museum of Transport; 16-17 January 2010.

Toward a Science of Consciousness 2008 (Art and Technology Exhibition), Tucson Convention Center; 8-12 April 2008.

Consciousness and Quantumcomputers, The 7th Swiss Biennial on Science, Technics + Aesthetics, Swiss Museum of Transport; 20-21 January 2007.

Consciousness and Teleportation, The 6th Swiss Biennial on Science, Technics + Aesthetics, Swiss Museum of Transport; 22-23 January 2005.

Artists-in-Labs—The Swiss Experience, Festival Science et Cité + Woche des Gehirns – BrainFair, Exhibition in the Terrassensaal KKL, Lucerne, Switzerland; 2005.

Space, Time and Beyond, 5th Biennial and International Symposium on Science, Technics and Aesthetics, Lucerne Theatre; 18-19 January 2003.

The Enigma of Consciousness, 4th Biennial and International Symposium on Science, Technics and Aesthetics, Lucerne Theatre; 20-21 January 2001.

Frontier Communication: Human Beings, Apes, Whales, Electronic Networks, 3rd International Symposium on Science, Technics and Aesthetics, Old Casino, Lucerne, Switzerland; 23-24 January 1999.

Liquid Visions, 2nd International Symposium on Science, Technics and Aesthetics, Old Casino, Lucerne, Switzerland; 18-19 January 1997.

Gehirn – Geist – Kultur, 1. Internationales Symposion zu Wissenschaft, Technik und Ästhetik, Museum of Art Lucerne, Switzerland; 22-24 September 1995.

Organization of over 60 exhibitions, public talks and concerts in the *Neue Galerie Schlössli Götzental*, Dierikon, Switzerland, and the *Red Wall Gallery*, Lucerne, Switzerland; 1984–1993. Among the invited guest artists were the Russian artist Ilya Kabakov (1988) and the American jazz pianist Paul Bley (1989).

Lectures and Workshops

Is There an Ecosemiotic Perspective for Today's Heterogeneous Knowledges in the Global Culture Industry?, IXth Consciousness Reframed Conference *New Realities: Being Syncretic*, University of Applied Arts Vienna; 2008.

Reframing Semiotic Telematic Knowledge Spaces and the Anthropological Challenge to Design Interhuman Relations, Conference *Reviewing the Future: Vision, Innovation, Emergence*, Montreal, Canada; 2007.

Reframing Semiotic Telematic Knowledge Spaces and the Anthropological Challenge to Design Interhuman Relations, Conference *? F.A.q.—Preguntas Sobre Arte, Consciência e Tecnologia*, SESC, São Paulo, Brazil; 2006.

The New Gallery Lucerne and the Swiss Biennial on Science, Technics + Aesthetics, Dorkbotbj-Meeting 2, Central Conservatory of Music, Beijing, China; 2006.

Artists-in-Labs (AIL) in Switzerland: Processes of Inquiry 2003–2005, 6th International Research Conference *Consciousness Reframed*, University of Plymouth, UK; 2006.

Artists-in-Labs (AIL)—Processes of Inquiry, Workshop at *FormInArt* with students from the *Hyperwerk* Basel, University of Applied Sciences Northwestern Switzerland (FHNW); 2006.

Guest in the Panel Discussion *Künstlerische Wissenschaft—Wissenschaftliche Kunst*, Foundation Science et Cité, Volkshochschule Bern; 2006.

Artists-in-Labs (AIL): The Challenge of Art in a Scientific Context—A Swiss Experience, Conference *Transmodalities: Mind, Art, New Media*, Sabancı University, Istanbul, Turkey; 2005.

Creating a Common Ground between the Mind in Experience and the Mind in Science, Conference *Altered States: Transformations of Perception, Place, and Performance*, University of Plymouth, UK; 2005.

Mind, Matter, and Quantummechanics—Toward a New Conceptual Theoretical Framework, Conference *Shaping Consciousness: Spirituality, New Media, and Identity*, Texas Woman's University, Dallas, US; 2005.

Complexity—The Great Challenge to Develop a Conceptual Theoretical and Practical Interface between Physics, Art and Consciousness Research, Conference *Qi and Complexity*, Consciousness Reframed 2004, 6th International Research Conference, Beijing, China; 2004.

Artists-in-Labs-Research, Symposium *Art in the Cultural Environment of Science*, Hochschule für Gestaltung und Kunst Zürich, Switzerland, Institute for Cultural Studies in Art, Media and Design; 2004.

Word count of main body of thesis: 75,481

Bound in copies of publications: 10

Copy number: ____

Lucerne, Switzerland, 15 April 2011

Signed: René Stettler

Table of Contents

0. The Scope of this Dissertation

> We are always attempting to retie the Gordian Knot[1] by crisscrossing, as often as we have to, the divide that separates exact knowledge and the exercise of power—let us say nature and culture. (Latour 1993:3)

I grew up in a small village at the foot of the Alps near the city of Lucerne in the heart of Switzerland. During my adolescence, my emotional and intellectual awareness of the whole gamut of the fragile conditions of life and human culture were impacted and formed by the unreconciled political atmosphere of the Cold War and the threats of a nuclear war between America and the former Soviet Union. Having thus experienced my childhood and adolescence, in a sense, as ontological uncertainty and menace towards the societal and cultural collective in which I was raised, a recurring dream I had as a boy was of my village being invaded by foreign military forces. Moreover, the Catholic environment with its rich cultural tradition and symbolic figurative world made me experience myself inside processes between materiality and semiosis, a very deep involvement in the reality of symbolic and sacramental spheres, religious doctrines of incarnation and trans-substantiation.[2] As a consequence, my understanding and relationship with "human", "nature", and especially with "human nature" and "human culture" and the universe was deeply entangled in an awareness of a small and subtle matrix of "high stake balancing acts" (Haraway 1997:47) in a morphing environment—a struggle between the physical and the non-physical, the organic and the non-organic, the material and the semiotic, the epistemological and the political.

In September 2008 when I started writing, I was diagnosed as having Lyme disease. Lyme disease or *borreliosis* is an emerging infectious disease caused by a species of bacteria (*spirochetes*) belonging to the genus *Borrelia*.[3] The diagnosis coincided with the beginning of the crisis of the world's financial systems impacting the world's economy and markets on the global scale. The sudden realities of abused fiscal responsibility by banks, global economic recession, unemployment etc. revealed the timeliness of investigating in greater depth the significance of the topic of my dissertation, that is, to explore the role of the humanities and the arts as producers of new knowledge and

[1] The *Gordian Knot* is a legend associated with Alexander the Great. It is often used as a metaphor for an intractable problem, solved by a bold stroke: "cutting the Gordian knot".

[2] I "owe" Donna Haraway the awakening of my mental and emotional memories of early experiences in my Catholic childhood. On several occasions, the American sociologist and writer refers to her experience of Catholicism at a young age that had an impact on her intellectual formation. (Sources: Haraway, Goodeve 1997:54-55; Haraway 1997).

[3] *Borreliosis,* the most common tick-borne disease in the northern hemisphere, is transmitted to humans by the bite of infected hard ticks. Early manifestations of infection may include fever, headache, fatigue and depression. Left untreated, late manifestations involving the joints, heart and nervous system can occur. (Source: Storl 2007; Wolf-Dieter Storl is a German-American ethnobotanist).

defenders of civilization. The biological conditions in which I was embedded and the global humanly-constructed economic and political circumstances—the complex networks of nature and the convoluted networks of human society—led me to cogitate on the kind of taken for granted order of the contingent rhizomes to which my existence and that of other beings belonged. I began to make sense of Fritjof Capra's (2002) understanding of the connections between life, mind and society—the hidden web of life, consciousness and social reality. Furthermore, the thinking of R. Buckminster Fuller,[4] one of the most important American thinkers of the 20th century and visionary for the 21st century, his fascinating mix of utopian vision and organic pragmatism and credo of "more for less", and his belief in the interconnectedness of all things encouraged me to pursue many of my thoughts and approaches articulated and developed in this thesis. It was R. Buckminster Fuller's work which sensitised me to the issue of closing the gap between the natural sciences, technology, and the humanities and the arts.

My encounter with *borreliosis* framed the writing process and the entire intellectual journey. Going through the process of healing, that is, eliminating or rather inhibiting the radius of power of the *spirochetes* in my body gave me valuable insights and food for thought. My interest in the 3.5-billion-years-old bacterial pathogen leading an asymmetrical war against my life tempted me to keep track of biological and physical metaphors as I started to take tremendous pleasure in the structural-functional complexes at very tiny levels.[5] During the medical treatment,[6] I developed a respectful attitude for the inscrutability of the natural phenomena, and the complexity of the interplay between human activity and ecological and evolutionary processes.

A New Social and Symbolic Space for Knowledge

The aim of my thesis is to contribute to the concept of a new communal space for knowledge—a social and symbolic space with a whole new ecology for diverse interests, knowledges and values to co-exist (cf. Turnbull 2000). With this goal in mind, my endeavours to understand and scan the relation between "cultural work" and human knowledge occasioned the invention of a new mode of "ontological location scouting".[7] The spectrum of my interests and themes began to evolve as a metaphorical cluster around the following key questions, which my work attempts to answer:

- To what type of future public cultural "spaces" of knowledge and "models" of traffic for knowledge should we aspire?

[4] Richard Buckminster Fuller (1895–1983) was an American architect, author, designer, futurist and visionary.
[5] As a "true super-microorganism" borrelia bacteria outwit the body's immune system and change its function by using deceptive strategies and camouflage; they survive temperatures of up to minus 50 degrees Celsius (Storl 2007:51, 52). The spirochetes' strategy is to "excrete antibiotic toxins" or to "adopt cystic form while they fall into a long sleep until the biological environment has improved" (Ibid.:27, 51).
[6] I took *doxycycline,* Pfizer's first once-a-day broad-spectrum antibiotic, but then followed Storl's recommendations by using a plant named *Fuller's Teasel* (*Dipsacus fullonum)* for which a number of medical properties, though not proven in medical trials, are claimed among them curing Lyme disease, antibiotic properties and improved circulation.
[7] The term was used by Haraway to describe her working methods. (See Haraway, D., Goodeve, T. N. 1997:46).

- What future cultural work practices are needed to sustain these “spaces”, and the ontological, epistemological, moral and ethical dimensions that our being-in-the-world entails?

- How should the contingency of human experience and knowledge be addressed in domains of cultural production and humanities- and arts-based civic dialogues?

- What answers to these questions support the retying of the Gordian Knot?

These questions, I am tempted to say, are rooted in my childhood and adolescence. They have “materialised” or rather ripened in my mind in the past 50 years, and thus today express my commitments and very personal concerns with the contemporary problems of rationality, reflexivity, transdisciplinarity, globalization, ecological thinking and acting—and especially those relating to the rational and authoritative forms of knowledge that my people and my culture have created. I wish to state that this dissertation was written in the spirit of my search of grasping and defining an imaginary, non-ideological and open mental space from which to nurture our knowledges, science, technology, objects, things, and the nature of the finite world which we inhabit.

Redefining the Politics and Ecology of Cultural Work

I was 13 years old in 1968 when Stewart Brand published the *Whole Earth Catalog*. At that time, I was too young to understand that this was—alongside the landing on the moon a year later and the paramount aesthetic revelation of seeing the Earth, the “Blue Marble”, from a distance—the beginning of the “environment”. 40 years later, this whole environment—our home planet—is at stake due to climate change and environmental destruction, which is potentially disastrous for life and civilization. Thus, my highest ambition is to contribute with this work to a theoretical framework of legitimate considerations in which reflections of how to modify our anthropology of creation may contribute to a finer sense of possibility for the cultural production and dissemination of knowledge, the redefinition of the *politics* and *ecology* of cultural work, and the exploration of a practice-based “epistemology” for humanities- and arts-based civic dialogues. I believe in the necessity to reposition and reorient the humanities and the arts within knowledge. To study the cultural production of knowledge and how knowledge spaces are manufactured offers both an understanding of the interrelatedness of knowledge and power, and the limitations of science and technology in solving the problems of human life.

1. Introduction

> In the current crisis, there are no backroom villains, no hidden cabal of evil plotters; we are all enmeshed in systems of commerce and manufacturing that perpetuate our problems. (Goleman 2009:39)

For the past 30 years, I have practised as a "cultural intermediary"[8] a style of "cultural work" that has fostered discussions and debates about science, technological innovation, art, and society. My work has aimed to involve people from all faculties, schools of thought and walks of life in a critical dialogue which they have long sought themselves but for which there has been no point of contact to date. Having observed the complexities and consequences of globalization in a rapidly changing world and the far-reaching impacts of science and technology on human culture[9] and the planet, I have found myself challenged to reflect on new ways of forging a stronger relationship between the humanities and civil society,[10] and to help them to develop new skills, values and confidence in order to anticipate potential global dangers and risks. My concerns with environmental destruction, global biodiversity loss or similar issues of unsustainability, the disturbing local and global realities of material consumption, the repercussions of technological advances, and the present moral crisis are rooted in an awareness that has recently become sharply apparent to many observers. More and more people are beginning to see the structural nature of the problems and built systems that are based on limitless growth, and for which we have ourselves to blame. The different facets of the moral crisis (for example, the unethical and imprudent behaviour of financial institutions) and the present tremors within the world's share markets, John Armstrong[11] argues, are the "outward signs of a deeper malaise" (2009, no pagination). While for Armstrong the "rot is at once cultural and ethical", he points to our "husbanding of desire" as expressed in "rampant consumption and production", and the anxieties that we have developed about climate change and planetary survival, leading him to envision

[8] I use here Bourdieu's (1984) term of the "cultural intermediary".

[9] I do not attempt to provide much elaboration on the term *culture*, which, especially in recent years, has undergone yet more transformations of meaning. I use the term in a broader sense to refer to ways of life, the arts, the media, political, educational and religious culture, and attitudes to globalization. For the purpose of this thesis, I suggest that culture, as it finds itself expressed in the arts, literature, film, and different practices of mediation and representation, draws from and participates in the construction of culture as a system of human values, beliefs and behaviours.

[10] For this thesis, I have adopted the working definition of civil society of the London School of Economics (LSE): "Civil society refers to the arena of uncoerced collective action around shared interests, purposes and values. (...) Civil society commonly embraces a diversity of spaces, actors and institutional forms, varying in their degree of formality, autonomy and power". See <http://www.lse.ac.uk/collections/CCS/what_is_civil_society.htm> downloaded 24 June 2010. For the research being proposed here, my understanding of the social, political and economic potential of the rise of civil society to be realised presupposes public spaces that are made available for its daily practices and collaborative engagements. The use of the term "public space" is intended here to be equivalent to "civil space".

[11] John Armstrong is a philosopher and the vice-chancellor of the University of Melbourne, Australia.

a redefinition of the humanities as the "custodians of a discourse about private and public virtue" (Ibid.). With my thesis, I wish to contribute to discussions that stake a claim for the discipline within the culture of innovation and challenge the ethos of individualistic self-interest. This opens a portal, as Armstrong suggests, for a discussion of the "vice of greed and its salve: the virtue of temperance" (Ibid.), and makes us reconsider issues concerned with human excellence and individual flourishing. Furthermore, the aim of this work is to contribute to discussions of how to develop more sustainable foundations for culture and society, and create an individual, collective and institutional awareness of our unviable and destructive pursuits in exploiting the planet economically and particularly materially.[12] As Reto Ringger[13] has suggested, it is a matter of developing a new "compass" that helps us to shift values, and of writing a "new software" with which we may reprogram our long-established ethical concepts, moral behaviours and actions (2009:20).

In only a few decades, environmental destruction has enormously impacted what Fritjof Capra has conceived in *The Hidden Connections* (2002) as the subtle "web of life", and this has profoundly changed the fragile ecological conditions that support life on the planet. In *Ecological Intelligence* (2009), Daniel Goleman points to the environmental impact of human activity on a planetary scale calling it the "onslaught against the natural world" (39). In *The Politics of Cultural Work* (2007), Mark Banks,[14] drawing on the sociologist Angela McRobbie, argues in a similar vein that market-driven individualization with its "destructive, de-socialising tenor" promises only further demoralization and dislocation (2007:163; McRobbie 2002). In terms of future social practices and with regard to the present political uncertainty, we might thus ask whether the imperatives of the globalised market and consumer culture and the incursions of commodification and marketization to which the cultural production of knowledge is vulnerable, as Banks argues (Ibid.:164), have rendered the world uncontestable. Different authors have problematised these developments from the scope of their diverse social, cultural, economic, political and ecological analyses (for example, Altvater 2007; Capra 2002; Castells 2000; Gibbons et al. 1994; Horkheimer and Adorno 1947). While some have suggested to "remoralise" social, economic, material and educational practices in the "search for place", as Banks points out (145), others have called for future paths towards a renewed ethic of civic virtue.

Imbalance Between the Humanities and the Sciences

In the past, discussions of and publications on the curricula of the humanities and the liberal arts have raised public awareness of academic criticism of the exclusivity of traditional canons and methodologies since the late 1960s, and also increased the public and political popularity of

[12] According to the *Earth Policy Institute*, there is abundant scientific evidence that humanity is living unsustainably, and returning human use of natural resources to within sustainable limits requires a major collective effort. Sustainability has become a wide-ranging term that can be applied to almost every facet of life on Earth, from the local to the global scale and over various time periods. (Source: <http://www.earth-policy.org> downloaded 29 March 2010).

[13] Reto Ringger is a Swiss pioneer of the concept of sustainability investments.

[14] Mark Banks is a British lecturer and writer. His research interests are in the cultural and creative industries, work and identity, media and popular culture, cultural policy and urban space.

instrumentalist views on education for employment, as Berger et al. note (2001:21). The *Report of the Humanities, Science, and Technology Working Group* published by the American *National Endowment for the Humanities,* for example, prolematises several aspects of the traditionally practised work of the humanities and the civic dialogues which they constitute. These aspects include the unease at social and cultural changes registered by scholars and literary authors in the 19th century that accompanied the growth of science and technology, and the imbalance between the humanities and the sciences following World War II in the 20th century (Farr et al. 2000:3). Over a century later, unease has remained, but is now expressed in the growing public concern about issues connected with the environment and health, as Gibbons et al. note (1994:7).[15] Issues such as the more rapid and large-scale deterioriation of the environment, global warming, increasing poverty, alienation and social disintegration, the dangers of terrorism and nuclear proliferation, and future climate wars (for example in Welzer 2008) are now linked to the public awareness and many people's desire to influence the outcomes of the research process in science and technology. Yet, what is the relation between the environmental impact of industrialization and globalization in which science and technology have played such a crucial role—and the public face of the humanities? What are the relations between the cultural production of knowledge and the apparent imbalance between the humanities and the sciences? The keyword is "unequal", and what I mean by *unequal* draws on Bruno Latour's proclaimed opposition between ontology and epistemology—the "dividing line" between the unequal status that we have attributed to the physical world "out there" and our many beliefs and mental conceptions "in us" about this world (1999a:280). In my analysis, I will focus on Latour's many mental worlds "in there" (Ibid.:284)—the human-centred universe to which the humanities, science and technology, our beliefs and *everything* including our material-semiotic articulations of these beliefs belong. My concern centres on the many *fingers* (cf. Latour 1999a) of science, rationality, ontology, epistemology, reflexivity, ethics, ecology and politics that we utilise in pointing to our numerous self-created realities, ideas and convictions.

Rethinking Knowledge and the Conditions of the Cultural Production of Knowledge

The near collapse of the world's financial systems has triggered a new kind of debate about the humanities and the arts that is gradually spreading into the public domain. For many the actual conduct of the humanities and the arts in the cultural workplace is on the right track and cultural work and knowledge have been convincing, valuable, reflexive, epistemological and moral collaborators before. There are those, however, who argue that our intellectual life is "out of kilter", and the faith in modernization, economics, politics, science and technology "no longer rings quite true", as Latour has pointed out (1993:9, 5). I would like to address the more fundamental issue of rethinking the *kinds* of knowledge that people need and the *conditions* under which it ought to be produced and distributed.

[15] Some 15 years ago, Gibbons et al. pointed to the necessity of a more "vernacular" science. They emphasised the connection between a growing public interest and science and technology, technological risks (notably in relation to nuclear power), environmental concerns, and potential dangers or ethical issues associated with biotechnology and genetic engineering (1994:36).

Thus, my aim is to reflect on the general character and outcomes of cultural work, and the ways in which "cultural work" attributes meaning to knowledge and positions us as interpretative subjects.[16]
In this thesis, I will thus problematise the practices of cultural work underlying the humanities and the arts and the civic dialogues which they promote. In doing so, I will scrutinise these dialogues as a distinct form of cultural communication, and I will investigate them with regard to reviews of the kind of knowledge they entail, and the societal and community concerns which they pursue in the cultural workplace. Formally and academically, the *humanities* represent our usual human activities, and the meaning and values that we construct in various ways by looking at the world and thinking about life. Yet, the *work* of the humanities and the *knowledge* which they involve is not any one thing. The outcomes of their work and the many knowledges that they provide are all around us and present in our daily lives. They are the newspaper we read, the news we watch on television, or the exhibition we visit in the local art museum. When we watch an episode of *Star Trek,* read Stefan Zweig's biography of *Marie Antoinette*, listen to the *Ritual Orchestra and Chants of the Khampagar Buddhist Monastry*, or visit San Francisco's *Exploratorium*[17] or Switzerland's *Technorama* in Winterthur,[18] these activities belong to the humanities, too. These humanities are always a manner of commitment that embraces human knowledge with a central concern for human beings and our self-conscious awareness of how we know what we know, and how we act. In short, the humanities structure and sustain our views and ways of thinking about the world, our ontological demands and cultural behaviours.

"Epistemology" of Cultural Work

In this thesis, I will study the humanities- and arts-based civic dialogues as a cultural custodian and key aggregate of human intellectual activity and "cultural work", and seek to provide an analysis of the epistemological, political and ecological circumstances in which their societal contributions are embedded and linked to post-industrial "knowledge work", the real-world economy, and the frameworks of governance in science and technology. A key concern of my thesis is the present situation surrounding the marginalization of the humanities and the arts in relation to the prevalent

[16] The broad scope of *cultural work* and *cultural workers* that I am concerned with are those which Banks defines as being directly involved in the "composing, designing, imagining, interpreting, and manipulating of symbols in order to create music, television programmes, films, art, clothing, graphic designs, images, and other forms of texts" (2007:189). I include in this list those academic experts and scholars acting as cultural "intermediaries" under the mandate of science and governance and related areas of philosophy, sociology, policy analysis and law, as well as participants from the public cultural interest, and art and media institutions. As "curators", "arbitrators" and "mediators" in the business of defining and grasping today's social and cultural reality, or from a more general perspective as "cultural activists" or "social/cultural entrepreneurs", they work in diverse professions. The names with which their work is emblematically adorned stand for an intangible form of labour frequently dubbed "information manipulation", "programming", "innovating", "facilitating", "creating", or "community founding" etc. (Ibid.:28). Such tags, I suggest, mirror the fuzzy and more ephemeral conditions of cultural production in post-industrial "knowledge societies" (see chapter 1.2.4 *Knowledge, Knowledge Societies and Knowledge Work*) while they also point to the pursuits of cultural producers in a globally-networked world. Moreover, their work may be seen as a form of navigation in digital information universes, and as a perpetual *fight* against the vast tide of ever-growing information and mountains of knowledge. As "on-line curators", "image-entrepreneurs", "net gurus", "knowledge-architects", "music-makers", "fashionistas", "brand-builders", or "dot-commers", as Banks notes (4), cultural workers may further be considered to be transient "inhabitants" of heterogeneous knowledge worlds in constant flux, while they are subjected to the idiosyncrasies of a "surface upon surface"-experience, as media-theorist Roy Ascott suggests (2006:109).
[17] See <http://www.exploratorium.edu> downloaded 8 June 2009.
[18] See <http://www.technorama.ch> downloaded 8 June 2009. *Technorama* is the Swiss Science Centre.

dominance of science and technology (See here Berger et al. 2001; Gibbons et al. 1994; Opie 2001; and also chapter 1.2.2 *The Fragmentation of the Humanities and the Arts in the Age of Information and Knowledge Work*). I am aware that some critics might remain sceptical of my attempts to reinvigorate cultural work in an age when work is temporary and insecure and characterised by "discontinuity and loose informality", as Banks (2007:169) outlines, drawing on the German sociologist Ulrich Beck. Given the broad neglect of utopian thinking in the mainstream of critical social science (Ibid.:170), and seeking to sketch out a vision of an alternative future, my aim in positing a different status for "cultural work" in the "politics of the present" is twofold. Taking the neglect of the "epistemological dimensions" of cultural work as a point of departure, I will evaluate the ways in which contemporary and future formats in the cultural production of knowledge bring forth renewed paths for reflexivity and contemplation. In doing so, my theoretical analysis will provide a rationale for an "epistemology" of cultural work and the epistemological grounding of visual culture, and reflect upon the outlook of an *ecological* relationship with it. I will sketch an "epistemology" of post-industrial cultural work for the humanities and the arts as a type of "knowledge work" distinct from and yet encompassing the "knowledge work" that the dissemination and promotion of scientific knowledge in the cultural field involves. I wish to say that my interest in the possibilities of a *different* cultural work is not rooted in the idea of some kind of artistic Eden, or a blueprint for a better market-driven society, which neoliberal commentators, politicians and capitalists, as Banks writes, have attested to the virtues of cultural work (95).[19] Distinguishing between present characteristics of cultural work and future ones, and being aware of my imaginative shortcomings in considering only a small portion of the many fields of knowledge which the humanities and the arts have traditionally embraced, I seek to expose the ambiguities in present cultural work in order to ignite critical viewpoints in the contemporary contexts of the reflexive production in the humanities and the arts, science and technology, and the economy and politics.

Collaborative Perspective for the Humanities, Science and Technology

A central theme of my thesis is to explore the transient, interdisciplinary, epistemological and political dimensions of cultural projects, reality-negotiations, practices, actions, institutions and people as authorities and mediators in the business of grasping our socio-technological post-industrial reality.[20] I

[19] *Neoliberal* is a difficult term to define, particularly given the many definitions and usages in contemporary political discourse. I use neoliberal/neoliberalism in the manner criticised by Anthony Giddens and Will Hutton. Drawing on Ulrich Beck and Richard Sennett, they criticise neoliberal philosophy by problematising the rise of individualism as a "mixed blessing", and the failure of neoliberalism both at the level of individual conviction and as an orientation to inform intellectual discourse on economic and political frameworks. They argue as follows: "Individual choice alone—the key element of neo-liberal philosophy—cannot supply the social bonds necessary to sustain a stable and meaningful life. If individual freedom is to be extended then it must be accompanied by the construction of new cosmopolitan communities—otherwise the result is a generalised personal insecurity. (...) The new far right has its origins in this situation. Western conservatism is developing a nationalist and sometimes, as in Austria and Switzerland, an overtly racist tone" (2000:217).

[20] My use of the word "post-industrial" draws on the theories of Daniel Bell (1973) and the taxonomy of George Ritzer (2007). Although the theory of the information revolution may provide a clearer theoretical and empirical framework than the commonly used term "post-industrial society" (examples of post-industrial societies include the US, Canada, Japan and Western Europe), my understanding of "post-industrial" is based on the idea of a society in which an economic transition has occurred from a manufacturing-based economy to a service-based economy, the diffusion of national and global capital, and mass privatization. Among several salient changes in social structure associated with the transition to a "post-industrial society", Ritzer's taxonomy emphasises that

will reflect on the multifaceted complications of the rapid expansion, heterogeneity and contextualization of knowledge and the knowledge-oriented labour underlying it as it is characteristic today of both culture and the humanities as well as of science and technology. The aim is to explore a new theory of cultural work, and thus I will venture into the meaning-making ideas, intentions and motivations behind three selected projects, which all are major contemporary cultural narratives. These scenarios strongly evoke the extraordinarily heterogeneous complexity of post-industrial knowledge in socio-cultural environments. The first is a public exhibition on the new 57km-long *Gotthard Base Tunnel*, the longest tunnel in the world, which will be under construction in the Swiss Alps until 2018.[21] The second is filmmaker Jennifer Baichwal's documentary *Manufactured Landscapes* (2006)—a portrayal of the Canadian photographer Edward Burtynsky and his work on China's industrial revolution; and the third is Ai Weiwei's[22] social performance *Fairytale* at Documenta 12, for which the artist invited 1,001 Chinese people to the city of Kassel in 2007. In the next section, I reflect on my intentions as to how to provide evidence for the key issues of my thesis, and how the three case studies will serve as explorative material.

The *Report of the Humanities, Science, and Technology Working Group* published by the American *National Endowment for the Humanities* relies on the US landmark 1964 study, *Report Commission on the Humanities*. Farr et al., who included the report 36 years later in reflections on the future work of the humanities, science and technology, re-emphasise the validity of the report's key guidelines with regard to its more generally formulated suggestions of how to create an interface between the sciences and the humanities. They reiterate the common notion, for example, that if the interdependence of science and the humanities were more generally understood, "men would be more likely to become masters of their technology and not its unthinking servants" (2000:4). However, public awareness has shifted in recent decades from the notion of mastering science and technology to questions of how to respond to the widely-recognised problem of public unease with it. In the European Commission (EC) report *Taking European Knowledge Society Seriously* (2007),[23] the authors outline that public unease with science is especially expressed in relation to new science-

theoretical knowledge as the basic source of innovation is increasingly important in a post-industrial society *instead of* practical and empirical know-how. Advances in knowledge lead to the need for other innovations such as ways of dealing with *ethical* and *moral* questions. Therefore, the exponential growth of *theoretical* and *codified knowledge* is central to the emergence of the post-industrial society. Further, in post-industrial societies new intellectual technologies such as cybernetics, game theory and information theory are developed and socially implemented (see here the conclusions in chapter 4 *Epistemology of Post-Industrial Cultural Work* with regard to the discussion of second-order cybernetics as a paradigm for the ethical, aesthetic, pragmatic and political convergences of cultural work).

[21] The *Gotthard Base Tunnel* is a new railway tunnel under construction in Switzerland. With a projected length of 57km (35 miles) and a total of 153.5km (95 miles) of tunnels, shafts and passages it will be the longest tunnel (of all railway and road tunnels) in the world upon completion, ahead of the current record holder, the *Seikan Tunnel* (connecting the Japanese islands of Honshū and Hokkaidō). The tunnel is part of the Swiss AlpTransit project, also known as *New Railway Link through the Alps* (NRLA), which also includes the *Lötschberg Base Tunnel* between the cantons of Berne and Valais. (Sources: Vetsch 2002:152-56; *The New Gotthard Rail Link.* AlpTransit Gotthard Ltd. [Ed.] 2005:2-5, 8-9, 14).

[22] Ai Weiwei, born in 1957 in Beijing, is a leading Chinese artist, curator, architectural designer, and cultural and social commentator.

[23] The producers of the report are Ulrike Felt (rapporteur) and Brian Wynne (chairman). The highly-qualified international expert group consisted of Michel Callon, Maria Eduarda Gonçalves, Sheila Jasanoff, Maria Jepsen, Pierre-Benoît Joly, Zdenek Konopasek, Stefan May, Claudia Neubauer, Arie Rip, Karen Siune, Andy Stirling and Mariachiara Tallacchini. In order to make the collective authorship of the 14 personalities behind this work more transparent, I refer to it in this dissertation as the work of *Felt, Wynne et al.* See the bibliographical entry on page 163.

based technologies (Ibid.:9). Regarding science and governance, the EC report suggests improving the involvement of "diverse elements of civil society in European science and governance" (Ibid.) in order to address urgent policy changes that are often taken "as strongly scientific in nature—including climate change, sustainability, environment and development" (Ibid.).

With the aim of laying the foundation for a future collaborative perspective of the humanities, science and technology in contexts of cultural production, a key argument—for which I seek to provide evidence in this thesis—is that the engagements of the humanities and the arts are seriously challenged by the continuous growth of science and technology and poised for a new period of intellectual and educational accomplishment. It is therefore the kind of *reflexivity* and *knowledge* that humanities- and arts-based civic dialogues entail that my thesis intends to explore. Furthermore, by touching on issues of cultural and scientific learning, creativity, and reflections on the human and cultural forms of capital, my work includes reflections on the global risk society, cosmopolitanism, neo-liberalism, and the relations between the cultural forces of globalization, commercialization and market-driven cultural work in particular. While the study of the Gotthard Base Tunnel exhibition and Jennifer Baichwal's film *Manufactured Landscapes* provide in-depth analyses of the material-semiotic responses to and reverberations of the technological, economic and cultural change, the study of Ai Weiwei's massive living intervention *Fairytale*—in contrast—addresses issues of the idiosyncratic, concept-driven and methodological approaches of contemporary art. The case study of *Fairytale*—a multimillion dollar project realised in the context of one of the world's most charismatic exhibitions called *Documenta*—will touch on issues concerned with the aims, scope and size of cultural projects, and the heterogeneous global economic networks in which cultural work is embedded.

Case Studies of Social, Cultural and Political Relevance

In my inquiries into the nature, theory and practices of post-industrial cultural work, I will follow approaches and ideas with a strong degree of challenge, cultural change and institutional risk. My intention (beyond the semiotic community) is to provide case studies of social, cultural and political relevance, and to explore the prospects for a new form of communal workspace for knowledge and cultural work. Concerning theories of cultural work, no summary or review articles have been written on this topic, and there are no sociological texts exclusively devoted to theories of labour in cultural industry organizations. In *The Politics of Cultural Work* (2007*),* Banks provides an overview of the intellectual traditions that appear to be supporting emergent empirical studies of cultural work, as the book offers a broad theoretical understanding of cultural work from the perspective of "critical theory" approaches ("Frankfurt School" Marxism) and a "governmental" ("neo-Foucauldian") approach that sees cultural work as a mode of managerial, "business-oriented" authority, and liberal-democratic theory. Banks, quoting Tim Dant,[24] claims that in general contemporary critical theories "neither focus on work as a distinct sphere of life, nor provide a detailed empirical account of the organization of work" (2007:25; Dant 2003:42). Critical theory approaches such as the Frankfurt School have investigated cultural work from the scope of social conditions such as the problematic alienation of

[24] Tim Dant is a British sociologist with research interests in material culture, critical theory and the moral impact of the media.

cultural workers from the possibility for "authentic self-formation", as Banks points out (2007:182), and thus stress the impact and the consequences of the cultural industries, exploitation of workforces and economic globalization etc. The aim of this thesis is to focus on the distinct character of post-industrial cultural work and to elucidate its outcomes that create opportunities for civic dialogue. Thus, I consider my case studies rare humanities- and arts-oriented civic projects studies, but instead of analysing particular patterns of social relations and the labour process in detail, I will venture into the "cultural content", languages and the narratives by which knowledge is culturally presented and conveyed. As these issues have been largely ignored in theory, and are thus significantly under-theorised, my interest is in the deeper ontological, epistemological and political significance of the material-semiotic representations that cultural projects and their environments provide. I thus extend the scope of this dissertation concerned with present humanities- and arts-based dialogues to what I call the *structure* of the cultural production of knowledge. I use the word *structure* as a reference to Latour's whole of human and non-human actors and the networked entirety of material-semiotic relations and associations (see chapter 1.2 *Theoretical Perspective*), and I further use it to encompass the wider social, economic and political contexts in which our lives are embedded. While these humanly-created contexts are linked to our linear pursuits and activities of economic growth and material consumption, as Capra argues (2002:208), there is a causal connection to global warming, climate change and the changing life conditions on the planet. These issues are now scientifically-evidenced and no longer hypothetical.[25]

Cultural Imbroglios

Consequently, the overall focus of this thesis is on the cultural production and building of heterogeneous humanities- and arts-based knowledges passed on by material and metaphorical "languages", hybrid cultural claims, mediations, cultural images and visual strategies, and the hidden interconnections which are implanted in these locutions. I am interested in Donna Haraway's (as one of the authoritative writers in the cultural critical tradition of science studies) notion of the contemporary social "implosion" of technoscience, which she describes as the "sticky economic, technical, political, organic, historical, mythic, and textual threads that make up its tissues" (1997:68).[26] With the eyes of a cultural anthropologist, I reconstruct the "building-blocks" of these (t)issues and cultural aggregates. How is cultural content and meaning reflected, articulated and represented? How do cultural workers construct and disseminate cultural artefacts in the context of social action and in face of the challenges of a multitude of contemporary moral and political impulses? In order to answer these questions, I will consider the deeper yet unexplored mechanisms underlying the post-industrial cultural production and dissemination of knowledge from the methodological perspective of science studies. As science studies have uncovered what Latour called the *interconnected threads of reasoning* that underpin the inextricably bound together work of science and politics (1993; 1999a), I

[25] Scientists who study global warming and climate change are currently in a state of suppressed panic. Things seem to be moving much faster than their models predicted. In his book *Klimakriege* (Climate Wars), the German sociologist Harald Welzer reflects on the blindness of the social and cultural sciences with regard to the consequences of global warming.

[26] I use the term *technoscience* with its associations of "technology" and the Greek word *tekhnē* (skills), and as a reference to the social contexts, labour, skills, and machines of the sciences.

have transposed its interests to my research in order to come to terms with the cultural, ontological, epistemological and political dimensions of what we claim to be our "knowledge" of the world (for a more detailed reflection on the methodology see chapter 1.1 *Methodological Considerations*). The focus is on cultural images, languages and interactions, and their material-semiotic properties. These *cultural imbroglios* (*sensu* Latour 1993) are the result of cultural labour. They mirror our everyday public business and theoretical assumptions in connection with scientific, technological and cultural innovations, the environment and globalization, and the kind of fuzzy social accountability that crystallises in the ways we stage and use semiotics and rhetoric—representations of our "knowledge of things" which we pretend to "possess" or to "know" (for further considerations of Latour's prescription for an anthropology of science, and how I will adapt it to the cultural context, see chapter 2.1 *Building a Transalpine Railway Tunnel and Manufacturing a Public and Transient Cultural Space of Knowledge [Case Study 1]*).

A New Epistemological and Political Model for Cultural Work

My thesis provides a way of conceptualising the potential of and the necessity to address a number of salient issues in the cultural production of knowledge including reflections on the concept of knowledge. The cultural circumstances and hybrid projects I study—let us say *culture as knowledge*[27]—are human ventures with different ontological, epistemological and aesthetic characteristics and intentions. These cultural entities and creations, "languages" and knowledges, point beyond their material-semiotic appearances and discursive dimensions. These cultural narratives refer to social, economic and political realities and interactions between a multitude of available knowledges. The *interactions* I focus on are interactions between humans and knowledge, which I will explore in this thesis from the scope of labouring processes that *transform* and *stabilise* knowledges in constant flux and mediate the economic and political reality that surrounds us. As cultural work has only recently started to come under closer academic scrutiny (Banks 2007), I will provide fresh data on its achievements in the domain of civic dialogues and exchange.

My aim is to develop an "epistemology" and political "model" for the future of post-industrial cultural work. Altogether, this relies on an in-depth analysis of cultural issues—the study of the interaction of human actors (cultural workers) and knowledge as a symbolic entity, and its transformation and stabilisation in specific cultural settings. My analysis of civic cultural practices and the heterogeneous outcomes of cultural work calls for an interconnected view of the ontological, epistemological and political dimensions in which cultural work is embedded as an integral part of communities contributing essentially to the social well-being of these communities. The ambivalent concept of post-industrial economic "knowledge work" plays a crucial role in my reflections (see chapter 1.2.3 *The Ambiguity of Knowledge Work*), but while my focus is on the ontological, epistemological and ecological dimensions and significance of cultural work, I will not assess its economic value.

[27] Here, I follow McCarthy's more general claim in *Knowledge as Culture* (1996) that knowledge is best conceived and studied as *culture*.

Alongside explorations into an alternative rationale—a new political and epistemological model for cultural work and the cultural workplace—the concept of a "third" and new communal space of knowledge (Turnbull 2000) is at stake (see chapter 1.2.5 *John Brockman's "Third Culture" and the Possibility of a Different "Third" Space of Knowledge*). What are the conceptual challenges for envisioning different cultural spaces for knowledge and the practices that define them? My search for answers to this question is framed by the sociology of knowledge, which I will consider in the next section.

1.1 Methodological Considerations

In my research the commonly used word "methodology" has been replaced by the more appropriate term of "methods of working", which I have borrowed from Haraway (1997:49). I investigate theoretical frameworks with my "methods" and I follow a particular mode of describing, analysing and examining the topics and the cultural body of my research which is, I suggest, an epitome of "knowledge-based" cultural work itself. "Cultural knowledge work" (as I will colloquially call it) extends Banks' definition of cultural work as an "act of labour within the industrialised process of cultural production; and (...) the *politics* of this work—how it is constructed, managed and performed" (2007:3) to an *epistemological* scope of post-industrial cultural work. The specific concern is: What kind of knowledge, if any, does cultural work in the humanities- and arts-based civic dialogues construct, manage and perform? To answer this question, the particular perspective taken in this thesis is that of an anthropological analysis of the post-industrial world, its artefacts and material-semiotic structures, cultural metaphors and representations. For example, instead of providing a historical analysis, I will venture into cultural projects and the social and communal space of knowledge they construct and occupy.[28] Hence, my inquiries are investigations into different humanities- and arts-based modes and kinds of knowledges, cultural mediations of technological and scientific innovations, and the material-semiotic outcomes of human reflexivity in the cultural workplace. My considerations are concerned with the following questions:

- What is the ontological status of these cultural settings, civic dialogues, and projects?
- What socially, ethically and politically legitimated realities do they narrate, and what stories and knowledge do they convey?
- What properties of issues we value do they possess?
- What sort of social and cultural learning do they promote?

My focus is on ontology, epistemology, ideology, visual and textual strategies, rhetoric and staging by balancing formal and theoretical exposition, and extending my practical and theoretical work as a "cultural intermediary" to a deeper anthropological understanding of culture. Central to my

[28] My more epistemologically- and ecologically-oriented understanding of a "knowledge space" (*sensu* Capra 2002) relies on David Turnbull's work-based concept. In Turnbull's definition a knowledge space is an "interactive, contingent assemblage of space and knowledge, sustained and created by social labour" (2000:4).

explorations into the interrelations of post-industrial culture and knowledge are considerations of the impact of techno-informatic reality and economic *knowledge work* on the cultural practices of knowledge. Regarding implications and assumptions embedded in the alliance of the humanities and the arts and industry, my research also sheds light on the thinking underpinning the imperative to incorporate the humanities and the arts into the industrial paradigm of economic knowledge.

The Sociology of Knowledge and the Political Dimensions of Cultural Work Practices

The sociology of knowledge occupies an ambivalent place within sociology itself and the social sciences and humanities as a whole (Longhurst 1998:309). Part of the problem has been the issue of what is to be excluded from the sociology of knowledge and what distinguishes it from sociology itself. All sociology is about knowledge in some shape or form. There are those who are not sympathetically inclined towards this approach and who have therefore declared the sociology of knowledge to be unnecessary (the *redundancy* critique) while others have claimed that the sociology of knowledge "over-socialises its object of study, neglecting the physical properties of the mind" (the *imperialist/over-socialization critique*) (Ibid.). Generally, it can be said that the sociology of knowledge offers a perspective on what McCarthy, referring to Berger and Luckmann's 1966 phenomenologically grounded treatise *The Social Construction of Reality*, sees as amounting to a restoration of several elements, in particular the political atmosphere in which knowledges are created (as portrayed in Karl Mannheim's work) (McCarthy 1996:2). The sociology of knowledge that I will use for my reflections presents what I consider to be fundamental features of the political dimensions of cultural work practices.

From such a perspective, this work examines the dynamic functions of knowledge in public cultural life and its relations to the broader social and political paradigm of knowledge creation. Moreover, this research concerned with cultural knowledge-making, artefact construction, representation and knowledge-based cultural work practices can be considered "hybrid". Located in the space between Cultural Studies, the Sociology of Scientific Knowledge (SSK), and the French school called Actor-Network Theory (ANT), which forms part of the research field called Science and Technology Studies (STS), it contributes, in a sense, to all of these intellectual paradigms.

1.2 Theoretical Perspective

The work of a number of authors in science, philosophy, sociology, the history of ideas and other disciplines have contributed thoughts and themes to this dissertation. Their work helped me to theorise along the lines of the theoretical frameworks of this research. The Czech-born media critic and philosopher Vilém Flusser has been a key figure, with his seminal view of the future of design, which concerns both industrial and cultural ethics and our ways of designing the world as a whole. Flusser's (1990) criticism of the "stubbornness" and the "non-creativity" of politics and its discourses which, in his view, operate in "outdated categories" such as "nuclear weapons", "energy crisis",

"distribution of goods", or "Third World", have accompanied me throughout the writing process. Several other authors have specifically encouraged the pursuit of ideas, methods and knowledges across the borders of academic disciplines. Apart from major academic differences, the work and respect of these authors for the heart-and-mind concern with the ethical issues of human and societal relations encouraged me to combine approaches, and to problematise subjects in new ways in order to focus on new ideas with regard to the present challenges of cultural, social and environmental renewal. The late Heinz von Foerster who introduced epistemological doubts to cybernetics, thus confounding the mechanistic ideas held by early cyberneticists, impressed me with his legendary enthusiasm and unforgettable vitality during public lectures, which I was fortunate to witness on the occasion of the 1992 Berne conference *Der entfesselte Blick* organised by Gerhard Johann Lischka.[29] Von Foerster's ethical and aesthetic imperatives, which focus on seeing ourselves as a part of the universe, as participants rather than outside observers, and on experiencing the "matrix that embeds" after Bateson's "pattern that connects" (Brier and Glanville 2003:5-6), have influenced my thinking as much as Fritjof Capra's critical insights into social and economic pitfalls in *The Hidden Connections* (2002). Capra's concepts of how to build ecologically sustainable communities and to design public arenas supported me in various approaches. The work of Flusser, von Foerster, Capra and especially that of the Austrian non-dualist philosopher Josef Mitterer (1992; 2001) made me aware of the tendentious dichotomies inherent in our political and epistemological representations. The work of these authors, as well as the writings of the French sociologist and anthropologist Bruno Latour (1986; 1987; 1993; 1999a) to which I will refer below, have supported my endeavours to combine ontological, epistemological and philosophical differentiations with regard to the distinction of natural and cultural processes. Many of the ideas of these authors concerning the forces and human behaviours that drive and determine science, technology, politics, economics, ideology and cultural idiosyncracies—critical issues of our time—have contributed substantially to this thesis. The work of Gregory Bateson in *Mind and Nature* (1979), and Humberto Maturana's and Francisco Varela's guide to the formation of cognition and human intelligence in *The Tree of Knowledge* (1987) have added an incentive to understand the biological roots of human constitution and actions, and our experience of ethical reflection. John Brockman's problematic concept of "third-culture thinkers", elaborated upon in his work *The Third Culture* (1995), is a pivotal intellectual cornerstone, which spawned the idea of a "third" space of knowledge in which aesthetic, epistemological and ethical issues can be interwoven. Michael Gibbons et al.'s work *The New Production of Knowledge* (1994), which explores the changes in the ways in which scientific, social and cultural knowledge is produced supported me in some of my ideas concerned with the future of cultural production and the dissemination of hybrid knowledge; it encouraged me to rethink established cultural practices and policies. The European Commission (EC) report *Taking European Knowledge Society Seriously* (2007) on key issues concerning science and governance in the EU has sensitised me to diverse social and policy concerns, and ways to implement reflexive thinking in the cultural production of knowledge. In providing stimulating contrasts to my explorations into the concept of "cultural knowledge work" and the "politics" of this work, the report was of substantial help and has supported me in many of my reflections on future prospects for a more sustainable cultural life and knowledge. By proposing an ethics of freedom, Michael Hardt's and

[29] Gerhard Johann Lischka is an Austrian-Swiss cultural philosopher, media theorist and publisher.

Antonio Negri's work *Commonwealth* (2009) has given me valuable insights into a possible constitution for our common wealth, and supported me in efforts to focus on the problem of articulating global commonwealth adequately from the scope of a knowledge-based cultural workplace. *Commonwealth,* from which I quote frequently in the second part of this thesis, has challenged and also enriched my thinking concerned with questions of the biopolitical scope of cultural work in the age of globalization. Finally, Ulrich Beck's examination of the risk society of the 21st century, which draws together the new world order where terrorism, financial turmoil and global climate change haunt our lives and engender powerful new risks and new modes of politics, has given me valuable insights into the human situation and concerns connected to the necessity of a wider cosmopolitical perspective from which to reflect on our self-inflicted problems.

The main sources that have inspired me in writing the thesis, and that I have used in order to make sense of a deeper social understanding of contemporary culture and knowledge, are first, the writings of the French historian Michel Foucault and those of Bruno Latour. A brief introduction to the work of Latour and Actor-Network Theory, which he developed together with other sociologists, and its significance for the theoretical framework of this thesis, his ideas about the collective scene of human life, society, institutions, ideology, knowledge and human agency, follows below.

Actor-Network Theory (ANT)

Actor-Network Theory or ANT is a distinctive approach to social theory and research which originated in the field of science studies. Developed within Science and Technology Studies (STS) by the French sociologists Michel Callon and Bruno Latour, the British sociologist John Law and others, it can more technically be described as a material-semiotic method. ANT tries to explain how material-semiotic networks come together to act as a whole. ANT reflects many of the preoccupations of French post-structuralism, and in particular a concern with non-foundational and multiple material-semiotic relations. Simultaneously, it was much more firmly embedded in English-language academic traditions than most approaches influenced by post-structuralism. Its grounding in (predominantly English) STS was reflected in a commitment to the development of theory through empirical case studies, and its links with work on technical systems were reflected in its inclination to extend the analysis of large-scale technological developments to include political, organisational, legal, technical and scientific factors. Among other attempts to empirically describe science and technology, the contributions of ANT anticipated this paradigmatic change in the social sciences (Belliger and Krieger 2006:17). From about 1990 onwards, ANT started to become popular as a tool of analysis in a range of fields beyond STS. It was developed by authors within organisational analysis, computer science, health studies, geography, sociology, anthropology, feminism studies and economics. Today, ANT encompasses a broad and controversial range of material-semiotic approaches for the analysis of heterogeneous relations such as those that this thesis investigates. In part because of its popularity, it is interpreted and applied in a wide range of alternative and often incompatible ways.

The aim of this thesis is to contribute to an opposing point of view for which, according to the Polish philosopher Ewa Bińczyk, ANT is a useful instrument for diagnosing the "global, uncertain, changeable, contemporary conditions of reality and society", and developing "a new epistemological

standpoint that does not privilege ontology over epistemology" (2008:205). While ANT's *principle of generalised symmetry* to which I refer below circumvents the unequal status of ontology and epistemology in Western philosophy, traditional *analytic epistemology* does not question the Western paradigm of knowing which can be exemplified by the Cartesian individual or *knower* (Fuller 1988; 2002:ix). As a result, the Cartesian perspective has sustained anthropocentric views, and human-centred methodologies and perspectives on knowledge for a long time.[30] Thus, a conceptual challenge of my work is to view cultural work and knowledge from an (ideally) non-dualist perspective that treats the domains of ontology and epistemology equally—an unsolved problem for the sociology of knowledge's strong programme.[31]

Latour's Anthropology of Science, Antidualism and the Cultural Context

I follow Latour's prescription for an anthropology of science to a large extent, and will adapt it to the contemporary "cultural context", cultural creations, artefacts, their "languages" and their interconnected networks.[32] I am inspired by Latour's originality in offering a distinct non-dualising philosophy in which neither nature nor society, neither the objective nor the subjective, are taken for granted, and which can even problematise the agency of matter, as Bińczyk suggests (2008:206; Latour 1999a:125) by incorporating it into empirical case studies (2008:205). Latour's criticism of the modern constitution and the closing of our eyes to the hybridity of the machines, technologies, and the "monsters" that are thus produced, and the tyranny of social interest dominating us—economic rationality, scientific truth, technological efficiency (Latour 1993:131)—has provided me with an important critical perspective. From Latour's four "guarantees" of the modern (and the non-modern) constitution which address the realms of the subject, the object, language and being, the focus of my research is directed towards the three realms of the object, language and our being. The realm of the object is that of things, technologies, facts and nature. The realm of language is that of the practices of discourse, mediation, translation, delegation and representation. My aim to articulate ontology is to assert that questions of existence (our understanding of the consequences and the sustainability of our "being" in the world) cannot be separated from questions of the sorts of knowledges that we involve in the processes of knowledge-making. In *The New Production of Knowledge*, Gibbons et al. have shown that these processes play an increasingly significant role in the culture industry as it embroils the humanities and the social distribution of knowledge in markets in a more diffuse sense (1994:91, 93, 95). Since dualist distinctions—both in theory and practice—are central to the cultural production and dissemination of knowledge, I have welcomed both ANT as an instrument, and

[30] The theoretical frameworks of the Sociology of Scientific Knowledge (SSK) have received criticism from the main theorists in the ANT school, Michel Callon, Bruno Latour and John Law. SSK has been criticised for sociological reductionism and a human-centred universe. SSK is said to rely too heavily on human actors and social rules and conventions in settling scientific controversies. The ANT school, instead, proposes that non-human actors (actants) play an integral role. For example, instruments, measurement scales, laboratories etc. have the unintentional capacity to close a scientific controversy.

[31] The strong programme of the sociology of knowledge formulated and supported mainly by two representatives of the Edinburgh School, Barry Barnes and David Bloor, exhibits what Bińczyk refers to as its "tiny weakness", namely the dualistic opposition between ontological and epistemological domains (2008:203).

[32] While human and non-human actors such as artefacts, institutions, material-semiotic structures, or other objectified norms or things are integrated into the same conceptual framework and thus are given equal status of agency, the resultant "methodological symmetry" allows research conducted in both science and technology, and the theory of human society to be treated equally (Belliger and Krieger 2006:15).

Latour's antidualism as a theoretical perspective to envision prospects of conceptual, social and ontological change.

The present work is confronted with some limitations in scope. My "fieldwork" and theoretical analysis has given me many insights into the "methodologies", theories and hybrid practices of contemporary cultural "working" knowledges and the significance, implications and values which they represent. Some of the limitations of my perspective can be seen, for example, in the fact that I did not discuss in each case study how it was financed. My thesis, then, is not always based on a complete network analysis. I wish to state that it would have taken a major research programme—far beyond the resources of my availability—to collect the necessary data in order to establish the exact limits for many of my arguments contributing to a different set of narratives.

Social Epistemology

Social epistemology's intention of understanding how "knowledge operates as a principle of social organization" (Fuller 1988; 2002:ix-x), and how it produces "certain effects, regardless of the agents' beliefs, unless those beliefs contribute to the production of the relevant effects" (Ibid.:x), provides an interesting perspective for this thesis. With the intention of addressing in this work the more fundamental issue of determining the type of knowledge that people *need* and the circumstances and cultural conditions under which it is *produced* and *distributed,* social epistemology provides an anchor with broad cross-disciplinary support. Originating in studies of academic knowledge production, social epistemology has begun to encompass knowledge in a various cultural and public settings, as well as the conversion from knowledge to information technology and intellectual property. From a socio-epistemological perspective an important question is, for example, whether science's actual rational conduct in society at large is "worthy of its exalted status and what political implications follow from one's answer", as Fuller suggests (ix).

1.2.1 The New Production of Knowledge

A new form of knowledge production is emerging in the way knowledge is being produced in science and technology, and also in the social sciences and the humanities. In *The New Production of Knowledge* (1994), Gibbons et al. have identified and described a transformation in the mode of knowledge production. This transformation is described in terms of emergence called "Mode 2", in contrast with traditional knowledge called "Mode 1", and has a range of characteristics among them transdisciplinarity, hetereogeneity, and contextualization. "Mode 2" knowledge is created in broader, transdisciplinary, social and economic contexts.[33] According to Gibbons et al., the emergence of "Mode 2" entails severe consequences as it calls into question the adequacy of familiar knowledge-producing institutions.

[33] The foundation of a number of *Institutes of Advanced Study* at German universities appears to confirm the findings of Gibbons et al. Personal mail dated 15 June 2008 to author from Helga Nowotny, one of the co-authors of the study.

The humanities and the arts accomplish inherently reflexive and often contemplative tasks when they grapple with the social reality of science, technology and politics, which they mirror and critically comment upon. However, while Gibbons et al. see correspondences between the growth of modern culture and the transformation of industrial society "in which science and technology appear to have been triumphant" (1994:92), they argue that "many contributions that the humanities have brought to reflect upon them, remain full of contradictions" (Ibid.). A key issue of my thesis is therefore the core values underpinning social practices and behaviours, and the more ambiguous type of reflexivity that humanities- and arts-based projects offer in transmitting knowledge and spurring debate about civic issues. Consequently and in an attempt to develop an "epistemology" of cultural work, my discussion will include the reflexive/ethical scope and moral economy of cultural work (Banks 2006).

1.2.2 The Fragmentation of the Humanities and the Arts in the Age of Information and Knowledge Work

Since World War II, research and education has focused overwhelmingly on science and technology resulting in the marginalization of the humanities, with negative repercussions for both knowledge and the human community. While the humanities appear to play an ambivalent role in modern culture, which has to do with a problematic and increasingly verbose embroilment in the processes of marketization and commercialization, their intellectual values are at the same time formed by the

Figure 1.1

social context in which they evolve and are practised, and, according to Gibbons et al., become thus entangled in markets in a "more diffuse sense" (1994:91). The new debate about the humanities and the arts touching on key issues of how they could forge a much stronger relationship with society, coupled with their marginal standing compared to the central role of science and technology in society, has raised questions about the possible causes of the marginalization of the humanities and the arts. Armstrong suggests that current shortfalls in funding are not the main reason for this marginalization, but tend rather to obscure the real problems, which he sees in a problematic relation between the humanities and the research paradigm in which they are embedded. He argues:

> The core problem can be expressed in the language of economics: the humanities are geared to supply, particularly to supply research. They ignore demand. They are set up to produce refereed journal articles; this is the overarching goal. The impact of research is measured largely in terms of citations in learned journals. This is a fair measure of the regard in which an article is held. However, the audience for these journals consists overwhelmingly of other researchers: that is, of fellow suppliers of scholarly material. So, what this criterion of success cannot capture—in fact, what it completely disregards—is whether anyone else is interested in, attracted to, inspired by, moved by or enlightened by this work. (2009, no pagination)

While Armstrong's conclusions point to the institutional bias in the humanities towards the "supply-side conception of the situation", he claims that research needs to be redefined to "embrace a wider range of cognitive virtues" and "many more qualities of thinking: grace, charisma, intimacy, spontaneity, wit, depth, simplicity, grandeur, warmth, openness, drama, intensity and generosity" (Ibid.). For Armstrong, these qualities are linked to the power of ideas, and "the ways in which ideas get inside our lives and come to matter in everyday existence" (Ibid.). He thus sees the highest achievements in the humanities in the combination of "scholarly merits with a wider vision of intellectual merit" (Ibid.), adding that we are perhaps "stuck with the word research" (Ibid.). In a similar vein and by recognising the uncertain nature of the humanities and the arts in post-industrial culture, Brian Opie points to the dominance of the discourses of science and technology over those of the humanities and the arts, and laments the lack of a similar publicly recognised *term* with which the latter could promote what they do:

> Major obstacles to shifting the center of gravity of this discussion are the lack of appropriate terminology and the fragmentation of the arts and humanities in the modern period into media forms with their own institutions, disciplines with their separate identities in academic organisational structures, and government agencies whose status reflects the marginal standing in conventional economic thought and power-knowledge relations of the arts and humanities. By contrast, the term "science and technology" has assumed a generality of reference which allows the institutional and disciplinary differences within science to be sub-sumed, especially for public discussion, by the one all-encompassing term. A similar term with a similar degree of public recognition is needed for the domain of knowledge represented by the arts and humanities; (...) (2001:2)

Consequently and by taking Armstrong's suggested reorientation of the humanities as a relevant stance, my intention in this thesis is to problematise the imbalance between instrumental and non-instrumental knowledge in cultural production, and to shed light on the value and impact of intellectual, educational and political/epistemological practices in the post-industrial cultural workplace. Furthermore, faced with the contemporary cultural imperative for business success and survival of "intelligent organizations" as places for the "recombination of personal and systemic intelligence and the knowledge society which in its core uses 'knowledge work' to transform the industrial society into a knowledge society," as Willke argues (1998:164), my concern is more crucially with the significance and role of cultural work and knowledge in humanities- and arts-based public projects. I would therefore like to ask: What are the task and the scope of cultural work in the age of knowledge work and of global knowledge cultures? What is the future of the humanities and the arts when culture and knowledge, as Alan Liu in *The Laws of Cool* (2004) suggests, are increasingly an issue of "information" and "content" destined only for "multimedia entertainment" (1)? And what is the future of human knowledge and culture when all culture is increasingly a "culture of information" (Ibid.)?

1.2.3 The Ambiguity of Knowledge Work

Located in the circuits of science and cultural studies, the sociology of knowledge, and its constructivist foundations, my eating of the apple of post-industrial knowledge and diagnosing the contemporary and rapid transformations from within selected cultural "reality-frames" are situated in the midst of a pervasive culture of knowledge called the information economy and the corporate knowledge economy. Post-industrial *knowledge work* plays a crucial role in the market-led domains of the corporate economy as a concept to sustain the foundational shift in the "being" of business organizations (Collins 1998, no pagination), and in the global contexts of the cultural industries' economies as a "culturally complex stewardship in knowledge-making" (Haraway 1997:73). While knowledge is considered to be a key resource of modern societies that contributes to human orientation in everyday life, to the "rationality of politics" and to the general productivity of the economy (Mayntz et al. 2008), *knowledge work* is regarded as contributing to business survival and success.[34] Peter Drucker (1973; 1979) first popularised the term and predicted the increasing importance of the "knowledge worker"; since then much research has been done into its meaning and relevance for business.

Slippery Term

Numerous authors have struggled in various ways with the slippery concept of "knowledge work" (Collins 1998; Despres and Hiltrop 1995; Drucker 1991; Liu 2004). David Collins, for example, suggests that the concept acts as a brake on academic post-industrialist analysis (1998, no

[34] This is because knowledge work is linked to organisational knowledge, in that the knowledge of the workforce comprises an organisation's knowledge base and "intellectual capital", which impacts the value of an enterprise (Kelloway and Barling 2000), and transforms the industrial society into a knowledge society (Willke 1998).

pagination). The problem common to analyses of post-industrialism and the knowledge age, Collins argues, is that the categorization of and forecasts concerning work are based on "vague" and "dubious" notions as regards the "nature of work", the processes of work and the processes of management in general. Furthermore, he claims that "knowledge work" is the privilege of an élite. Instead of attempting to define and analyse the notion of "work" and "knowledge work", which he sees surrounded by "ambiguity and confusion", he suggests that the debate should be refocused to analyse what he calls "working knowledge" across the population:

> Yet, we can, if we choose to make the effort, develop and use concepts for quite different ends. Why not, instead of bandying around buzzwords such as knowledge work, begin from the understanding that all workers are knowledge workers and that all have skills and working knowledge, rather than claim it as the possession of a minority group. If we are to regard workers as key resources, why begin from an initial assumption which implies that many have only the most limited resources at their disposal? How much better it would be if, instead of levering buzzwords into currently popular models and ways of thinking about management and organizations, we attempted to develop and apply concepts which could engender different ways of thinking about problems and innovations within organizations. (Ibid.)

Liu's work *The Laws of Cool* (2004) contributes to an understanding of the cultural life of information or, more broadly, of contemporary "knowledge work" in post-industrial global culture. In theorising knowledge work alongside future perspectives for the humanities and the arts, Liu explores the emergence of new information technologies that impact the forms and practices of knowledge, while Banks' work *The Politics of Cultural Work* (2007), to which I will repeatedly refer in this thesis, deals with the future prospects of *cultural work*. He draws on critical theory, governmentality and liberal-democratic approaches, and provides an in-depth overview of critical theory approaches to the workplace of the cultural industries, and the interrelations of power, capital and labour in contexts of cultural production. While Liu develops a critical understanding of "knowledge work" as a class concept, Banks investigates the constraints and freedoms of cultural work as the vanguard of a new autonomy which he sees challenged by the hegemony of capitalist social relations. Liu's concept of "knowledge work" is comprehensive as he draws on a variety of definitions and meanings of the terms *knowledge worker* and *knowledge* which he proposes to extend:

> *Knowledge worker* should now be extended further—even as far as consumers who, for example, use an automated teller machine and thus assume some of the work of clerks and tellers. (...) "Knowledge" thus includes in principle all the varieties of scholarship, research information, advertising, and so on, across the major occupational sectors and on both sides of the "work/leisure" divide. (392)

For Liu "knowledge work"—in the light of New Class theory—is *intellectual* work conducted by academics whose "technical, professional, and managerial function is very much to the point and must be thought positively rather than negatively" (Ibid.). He further includes in his definition clerical-level

workers, who constitute a "'proletarian' office labor force" (Ibid.) in order to underpin the inquiry of his study into an ethos of what he prospectively calls the "*new* new middle class" (393). More precisely, Liu's definition of "knowledge work" is what he claims to be the "techno-informatic vanishing point of contemporary aesthetics, psychology, morality, politics, spirituality, and everything" by adding that there is "no more beauty, sublimity, tragedy, grace, or evil: only cool or not cool" (3). So, he muses, "knowledge work" has become a "parallel system of learning—or just as accurately, antilearning—that turns away from an educational system it believes represents dominant knowledge culture, toward a popular culture whose corporate and media conglomerates, ironically, *are* dominant knowledge culture" (305). While Liu's study has focused on the US, he suggests that knowledge work might play a constitutive role on the global scale:

> The contemporary globe, perhaps, is not so much a preexisting object as a standing wavefront of simulation generated by knowledge work, as an *idea* of globalism—named, for example "new world order", "global market", or "World Wide Web". (287)

As an alternative to our "bandying around buzzwords" such as "knowledge work", as Collins suggests (1998, no pagination), I propose to circumvent his concept of "working knowledge" and to conceptualise "work" as a human activity that entails knowledge in various ways by attributing special attention to the *communicative* potential that all work in principle involves. *Communication* is not primarily quantitative, but a phenomenon which is also qualitatively complex. Put simply, communication, as Gibbons et al. suggest, allows "not just for one, but for an increasing number of possibilities of expression and representation" (1994:43). Furthermore, our ability to create and communicate issues of social relevance and interaction in conveying knowledge and information in open-ended ways—an insight which gradually emerged during the 20th century with the development of sociology as a discipline (Leydesdorff 2008, no pagination)—supports the idea of "knowledge workers" as dialogic communicators and knowledge producers who allocate meaning and content to cultural events.

In sum, my concern is to further explore present "cultural work" and its communicative and qualitative potential in civic contexts of knowledge production in the humanities and the arts, science and technology, and the economy and politics. I will venture more explicitly into the idea of "knowledge work" in contexts of cultural production which I see challenged by the globally-functioning knowledge cultures of lifelong learning, learning organizations and structures, team work, and diversity management etc. in the "information age" (Liu 2004). I ask: What does "knowledge work" evoke anthropologically and methodologically speaking in cultural production domains? And how do cultural work and knowledge serve as an aggregate in creating civic and democratic dialogue opportunities?

1.2.4 Knowledge, Knowledge Societies and Knowledge Work

For some time now, suggestions that we are on our way to a new type of society called a post-industrial "knowledge society" as outlined by Daniel Bell (1973; 1987) have been put forward in the sociology of knowledge studies to understand the production and the dissemination of knowledge in this society (Bender 2001; Gibbons et al. 1994; Maasen 1999; Willke 1998). An often-reiterated general claim of these studies is that knowledge is considered a central resource of modern societies which contributes to human orientation in everyday life, the "rationality of politics" or the productivity of the economy (cf. Mayntz et al. 2008). There seems to exist a common agreement that "knowledge" has become the most important "capital" in the present age, and that the success of any society lies in harnessing it. Consequently, knowledge and information are assessed as key components in the formation of any society, but also in the creation of a global society that shares knowledge about a variety of issues and possibilities and for which the emerging new electronic communication system has been an essential factor. However, one gains the impression that the formation of the post-industrial "knowledge society" is centred primarily around more strategic and economics-oriented political (and ideological) goals of how to make the latest technologies do business the Wall Street way (Capra 2002:141): that is, for example, to make "technological solutions" abundantly available for everyone with internet access. Additionally, in *The Crime of Reason* (2008), the Nobel Prize-winning physicist Robert Laughlin argues that we live in an age of disinformation and ignorance, in which access to knowledge and information is becoming increasingly restricted and criminalised. Our delusion is that we tend to believe that in the modern and technologically advanced world, knowledge and information are more freely available and flow faster than ever before, and that this free flow of ideas is behind our outstanding creativity. However, according to Laughlin, many realms of physics and biology are today off limits to public discourse because they are national security risks. Thus, Laughlin argues, we find ourselves dealing more and more with the strange concept of the *Crime of Reason;* that is, the growing restrictions on such fertile scientific and technological fields as cryptography, biotechnology and computer software design are creating conditions characterised by disinformation and ignorance. The media theorists Friedrich Kittler (1993) and Vilém Flusser (1990) have both repeatedly expressed concerns with the liberatory and humanising aspects of science and technological advance in providing a critical and political analysis of the complex interrelations between the production of knowledge in the sciences and the broader social context of the societies where it is applied. Based on Laughlin's critical view of the irresistible promises of "free knowledge access", "open education", "enhanced learning", "e-government" and "e-democracy", which for him are nothing more than a risky delusion, I question these developments as the apparent driver and enabler of all. My concern is that the "e"-emphasis on knowledge (and the prognosticated "benefits" for all societies and every human being on the planet) is overemphasised, misplaced priorities and perhaps even wrongly conceptualised (see my reference to "knowledge work" in the globally-functioning knowledge economies in the conclusions of chapter 2.1 *Building a Transalpine Railway Tunnel and Manufacturing a Public and Transient Cultural Space of Knowledge [Case Study 1]*).

Paradoxical Ethos of Knowledge

Liu offers a historical explanation of the rise of information technology, subculture, counterculture, mass culture, techno-culture and twentieth-century US "knowledge work". He calls attention to a "paradoxical ethos" of knowledge of the type that William R. Paulson and J. Hillis Miller call a "noise of culture" and a "black hole",[35] and notes:

> It is upon such a contrarian "unknown ethos" or "ethos of the unknown" secreted within knowledge work, I believe, that the humanities and the arts (...) must now come to bear or not at all. For the humanities and arts, this is where the contest for "humanity" now lies: to educate the ethos of the unknown that broods within knowledge work so that it is not also the same as an ethos of unknowing, of resenting the fated life of knowledge work so much that one could "care less" for knowledge. (72)

The problem of the "ethos of the unknown" in the humanities and the arts to which Liu refers is deeply implicated (as we will see) in our contemporary cultural knowledge cultures and practices.

Having stated at the outset that this thesis aims to look at the humanities and the arts from the perspective of both the private and public interests which they mirror and perform, a major underlying question is how technological "advance" should conflate with general societal "progress". A related question is to what extent the humanities and the arts can anticipate the future impacts of scientific and technological change or contribute to society in less fragmented ways, and perhaps even strive for a "remoralization" of the social, scientific, economic, material and educational practices of our time. Are these not *the* major challenges which lie at the heart of a so-called "knowledge society"? It seems to me that Liu's imperative to create the "most inclusive, flexible and intelligently interrelated mix of educational options to take care of all its citizens hungry to 'know'" (2004:22) points to the core of the relation between the humanities and knowledge.

Diffusion of the Newtonian Model

In summarising what has been said so far, and in order to comment on the ambivalence of "knowledge work" from a much wider scope, I see the necessity to develop a critical understanding of the *fingers* of science, rationality, ontology, epistemology, reflexivity, ethics, ecology and politics with which we point to our self-constructed realities, convictions and ideas. Both our thinking about "knowledge" and the "work" that is done with it are deeply entangled in the social, moral and epistemological aspirations and issues that the humanities and the arts have traditionally entailed (Gibbons et al. 1994:7). Having outlined some of the problems that exist today with regard to "knowledge work", the formation of so-called "knowledge societies" and the ethos underlying our post-industrial knowledge cultures and practices, it should now be clearer that the quest for a "third" space of knowledge and the social practices that define it as proposed earlier poses a major conceptual challenge for this thesis. It is

[35] William R. Paulson's and J. Hillis Miller's work is on the role of literature in the "information age".

further worth noting that my inquiries into the cultural production of knowledge and the redefinition of the role of cultural labour are framed by the cognitive and social forms and norms of knowledge production that Gibbons et al. conceive as a complex of ideas, methods and values that has "grown up to control the diffusion of the Newtonian model to more and more fields of inquiry and ensure its compliance with what is considered sound scientific practice" (2). While the word *scientific* is used by Gibbons et al. as referring to a distinct form of knowledge production in the vein of Newtonian empirical and mathematical physics, this suggests at the same time that it is the all-permeating ideology of *Western science* (Turnbull 2000:1) that controls the diffusion of knowledge. The Newtonian model can thus be considered a "trigger" in which the transformation or "trans-substantiation" of Western culture (*sensu* Haraway) into the post-industrial cultures of today's networked information economies and the global "knowledge society" is grounded.

1.2.5 John Brockman's "Third Culture" and the Possibility of a Different "Third" Space of Knowledge

Under the conditions of the new network global "knowledge society", the production and social distribution of knowledge has been accelerated and intensified due to an increasing commodification, commercialization and marketization of culture (Banks 2007; Gibbons et al. 1994; Horkheimer and Adorno 1947). "Knowledge" has turned into a form of "capital". One particular example of how scientific knowledge was promoted in the past decade under the ubiquitous conditions of global commercialization and the rapidly expanding cultural industries is the conceptually-oriented and also widely admired entrepreneurial ideas of *John Brockman*. A cultural impresario, Brockman, whose career has encompassed the avant-garde art world, science, books, software and the Internet, promoted his concepts widely in the book *The Third Culture. Beyond The Scientific Revolution* (1995).[36] The foundational concept of Brockman's *Third Culture* builds on C. P. Snow's "Two Cultures Concept" (1959) and the idea that literary intellectuals are on speaking terms with scientists, meaning that the chasm between the thinking of the humanities and the arts (and literary culture) and techno-natural-scientific reasoning may be bridged by the so-called "third culture".[37] However, the *Third Culture* which Brockman has promoted is neither an anthology nor an overview, but an orally transmitted living document of a dynamically emergent knowledge system, a *celebration* of the ideas of "third culture thinkers" formulating the central questions of our times in the domain of science. Among

[36] In 1991, John Brockman published an essay titled *The Emerging Third Culture,* which inspired an ongoing series of one-on-one discussions in which Brockman talked with many "third culture" scientists about their work and the work of other scientists.

[37] Snow himself regarded "science" as one cultural activity among many, according to Stefan Collini, and he placed it alongside art and religion as being indivisible from society's political, ethical and moral questions. He tried on several occasions to refine the claim of "The Two Cultures Concept" and acknowledged in 1971 that he remained dissatisfied with its purely academic formulation as the larger global issues underlying his case had only come to seem to him more central and more urgent (1959; 1998:lxxi).

these thinkers are physicists, evolutionary biologists, philosophers, biologists, computer scientists, psychologists, social, behavioural and anthropological scientists, and science journalists.[38]

Deceptive Package

Brockman's contributions have popularised new scientific concepts and have been reframed in the Swiss *Neue Zürcher Zeitung* on the occasion of an announcement of Suhrkamp's new "edition unseld". Denoted as a "deceptive package" (Wenzel 2008:45), the *Third Culture*, Uwe Justus Wenzel argues, has promoted intellectual discourse and created public opinion to "its best advantage" (Ibid.). My point in invoking Wenzel's critical assessment is twofold. First, it has to do with my own critical view of Brockman's work, which promotes scientific ideas as an exclusive form of truth in order to purport a tendentious natural-scientific understanding of the world and the knowledge about it. Second, with the intention of developing an alternative and conceptual understanding of a "third" space for knowledge, I will touch on a number of rather delicate and widely criticised issues such as sociological reductionism, dichotomous thinking and anthropocentrism (the epistemological construction of a human-centred universe). I have included these issues in my reflections about post-industrial cultural work and sketches of an "epistemology" for future humanities- and arts-based civic dialogues. From the theoretical perspective of my research inbetween the intellectual borderlines of cultural studies, the sociology of scientific knowledge (SSK) and Actor-Network Theory (ANT), my aim is to provide a deeper understanding of the *consequences* of our authoritative forms of knowledge which appear to permeate the whole gamut of knowledge production, as Gibbons et al. argue, and impact our thinking, values and projects (1994:7). My key interest is in the sorts of knowledges that we involve in the heterogeneous processes of cultural knowledge-making. As Felt, Wynne et al. (2007:66) have outlined, they touch on reflexive, ethical, moral and ontological issues—and the kind of instrumentalist enterprise of learning which modern science-dominated cultures promote.

1.3 Conclusions

The social context in which this research is embedded is the post-industrial cultural sector, cultural labour and its projects, and the production, dissemination and institutionalization of heterogeneous knowledge in humanities- and arts-based projects. The global and political context is the democratic frameworks of late capitalist society that have been unable to guarantee peace, security, stability and justice for its citizens, as the conflicts in former Yugoslavia, the war in Iraq and the collapse of the global financial systems have demonstrated. At the epistemological level, the focus is on the hybrid outcomes of cultural work, and the imbalance between the discourses of the humanities and the arts, and science and technology.

[38] Brockman's "third-culture thinkers" (the scientists communicating directly with the general public) tended to avoid the middleman and endeavour to express their deepest thoughts in a manner accessible to the intelligent reading public.

Unsustainable Sociosphere

Today, individual perception, collective knowledge and social values are impacted by the economic and political circumstances and conditions of globally-oriented local industrial environments and livelihoods. We share intelligence and knowledge and aim to improve the social, economic and cultural conditions in which our lives are embedded by imploring *sustainability*, a wide-ranging term which we apply to almost every facet of life, while there is now abundant scientific evidence that humanity is living *unsustainably*. Although in the past decades human sustainability has implied the integration of social, economic and environmental spheres to meet the needs of the present without compromising the ability of future generations to meet their own needs, the many unsustainable material worlds that we have created and nurture, and the severe degradation and destruction of the planet's natural ecosystems mirror our current thinking. The commodification, commercialization and marketization of all things and life—our problematic treatment of *everything* as a tradable commodity, of which the privatization of the global water resources is an example[39]—point to our deliberate production of ignorance and unethical pursuits of economic exploitation. Efforts to live more sustainably could take many forms from reorganising living conditions (for example, sustainable cities), reappraising economic sectors (for example, sustainable agriculture), or work practices (for example, sustainable architecture), to adjustments in individual lifestyles. Sustainability, Goleman argues, recognises that the three systems—the geosphere, biosphere and sociosphere—"need to be weighed in the equation for improvements" (2009:66). In *Ecological Intelligence,* Goleman distinguishes the three interlocking realms of the *geosphere* (soil, water, air and climate), the *biosphere* (our bodies, those of other species, and plant life) and the *sociosphere* (human concerns such as the conditions of workers) (Ibid.:57). The *sociosphere* which I have in mind for this thesis is the public domain of contemporary cultural knowledge-practices, and the social, "epistemological" and public space or *res publica* in which our conceptions, our ideas and our understanding of human excellence and individual flourishing become *debatable*. With regard to improvements in the sociosphere, the key interest of this thesis is to investigate prospects for a renaissance of current *cultural practices* and social learning, and to rethink the *kinds* of knowledge that people need and the *conditions* under which it ought to be produced and distributed.

What Knowledge?

A special challenge of this research is to come to terms with the disregarded unequal status that we have attributed to the physical world "out there", and our many beliefs, mental conceptions and the knowledge "in us" about this world, as Latour has pointed out (1999a:280). Thus, our culturally-created and collectively-defined social realities and the technoscientific worlds which we inhabit are mirrored in a multitude of knowledges and ways of thinking about them. But, whose reality and what knowledge

[39] In *The World on the Edge,* Vandana Shiva notes: "Energy companies are entering the water sector. General Electric has joined forces with the World Bank (...) to invest billions of dollars in a 'Global Power Fund' to privatise energy and water around the world. Enron has acquired Wessex Water in Britain and is bidding for the $800-billion global water market. Monsanto, the Life Sciences giant, is now leading the race to control water" (2000:125).

should it be? How are we to address the marginalization of the humanities and the arts in post-industrial culture if it is no longer possible, as Gibbons et al. suggest, to make a substantial distinction between the humanities and the sciences in the context of contemporary knowledge production and representation (1994:103)? How should we cope with the "problem" of public unease with science, as Felt, Wynne et al. have argued (2007:9), in humanities- and arts-based projects? And how can we redefine cultural work with regard to the wider ontological, epistemological, ethical and moral issues which it encompasses? I believe that the best way to explore these issues is by paying close attention to the details of cultural practices, and to provide a detailed account of its empirical manifestations. In my opinion, the ever more complicated social role of knowledge and its strong impact on public opinion is studied best as an element more explicitly linked to cultural, communal and knowledgeable assignments and institutional places (Swidler and Arditi 1994:306) by raising the following questions: What is the idea of a cultural "public space" or project? What does it mean to be "epistemologically in public" in cultural arenas (Haraway 1999:25)?

The Role of the Case Studies

At the epistemological level, my interest lies, as has been discussed, in the ordinary figurations, tropes, interconnections, networks and material-semiotic knowledges that we bring into being in the cultural workplace in order to give meaning to our collective and individual lives. My primary focus is on the significance and normatively salient, economic, political and epistemological dimensions of these "knowledges" which the case studies explore. They are in-depth portraits of cultural and civic dialogue projects; one of them—the Gotthard Base Tunnel exhibition—is supported by the Swiss government, and the other two—Jennifer Baichwal's film *Manufactured Landscapes* and Ai Weiwei's social performance *Fairytale* at Documenta 12—are private cultural initiatives. The studies offer a detailed description of the civic issue addressed, the cultural context, project goals, design, actual humanities and arts components, and dialogic methodologies. Furthermore, these studies provide analyses of impact and extrapolate lessons learned and issues raised about the principles, practices and philosophical underpinnings of humanities- and arts-based civic dialogue work. In chapter 2, I will initially venture into Actor-Network Theory as a (socio-)material-semiotic and methodological tool in relation to the three case studies and clarify some of the misunderstandings surrounding it. I will then introduce the case studies from the perspective of Actor-Network Theory and material semiotics.

In view of the uncertain nature of the humanities and the arts in post-industrial culture, it is my persuasion that a clarification of the social role and epistemological impact of "knowledge" viewed from the critical and aesthetic knowledges valued by the humanities and the arts is necessary. My analysis will thus provide a rationale for an "epistemology" of cultural work and the epistemological grounding of visual culture as I have pointed out at the outset. A central issue is to what extent the different kinds of objects of knowledge cause cultural attention as they are embedded in the larger context of the newly dominant, corporate knowledge cultures and the discourse of "enterprise" that the cultural industries have assimilated, as Banks suggests (2007:42). The humanities and the arts seem to be under the pressure of these globally-functioning knowledge cultures of lifelong learning, learning

organizations, team work and diversity management etc. (Liu 2004). With my attempt to sketch an “epistemology” of post-industrial cultural work for future humanities- and arts-based civic dialogues, the rethinking and redefinition of “knowledge work” as a distinct form of work in cultural production domains is at stake.

2. Cultural Spaces of Knowledge and “Cultural Knowledge Work”

> Bakhtin’s concept requires us to enter the contingency, thickness, inequality, incommensurability, and dynamism of cultural systems of reference through which people enroll each other in their realities. (Haraway [1997:42] referring to Bakhtin’s [1981] concept of the chronotope as a figure that organises temporality)

If we want to do philosophy, metaphysics and politics, and explore the character of knowledge, this cannot be done in the abstract. We need to proceed empirically (Law 2009b:2). This means, as Law points out, that in order to understand how realities “are done” or to explore their politics, we have to attend to practices and ask how these practices work (Ibid.). While the sociologists of science worked through exemplary case studies, the nascent actor network writers, also within the sociology of science and technology, did the same in order to shed light on the knowledge which lies in exemplars as “words are never enough” (Law 2009a:144). As a consequence and for the purpose of studying the practices, the enacted realities and the knowledge which the three case studies entail, the actor-network approach is used to detect the “somewhat ordered sets of material-semiotic relations” and to undertake the “analytical and empirical task of exploring possible patterns of relations” (Law 2009b:1). Not only are these relations materially and semiotically assembled in particular locations (such as in the public scene of the Gotthard Base Tunnel exhibition), but whatever it is that is being assembled (materials, objects, images, subjects, people, meanings, realities, knowledges) also depends in the other two studies on the form of practices that constitute assemblages of relations in a particular moment, space, place, occasion, location, or a medium (for example a film such as *Manufactured Landscapes*). Thus, the material-semiotic entity of the Gotthard Base Tunnel exhibition, a film such as *Manufactured Landscapes,* or the socially and materially heterogeneous system of *Fairytale* at Documenta 12 constitute what Law calls *assemblages* which do specific realities including, as he further emphasises, “incidental collateral realities [which are] inseparable from the patterning juxtapositions of practices” (Ibid.:2).

The (socio-)material-semiotic approach which I use in this thesis to explore the three case studies is contained in Law’s definition of Actor-Network Theory, which is one form of material semiotics among other material-semiotic approaches. This approach frames the scope of my analytical interest to explain something in more descriptive rather than explanatory terms, that is: to explore “stories” about “how” relations assemble and knowledge spaces are created, and develop a sensibility towards what Law calls the “messy practices of relationality and materiality of the world” (2009a:141). Hence:

> Actor network theory is a disparate family of material-semiotic tools, sensibilities, and methods of analysis that treat everything in the social and natural worlds as a continuously generated effect of the webs of relations within which they are located. It assumes that nothing has reality or form outside the enactment of those relations. Its studies explore and characterize the webs and the practices that carry them. Like other material-semiotic approaches, the actor network approach thus describes the enactment of materially and discursively heterogeneous relations that produce and reshuffle all kinds of actors including objects, subjects, human beings, machines, animals, “nature”, ideas, organizations, inequalities, scale and sizes, and geographical arrangements. (Ibid.)

While my analysis of the case studies is methodologically inspired by Actor-Network Theory, it is, however, important to outline some of the misunderstandings in relation to the term “network” and the connotations which this commonly used word implies. As the word implies a more technical meaning (in the sense of, for example, a telephone “network” or computer “network”), the metaphor of an actor-network is, according to Latour, a different entity:

> The first mistake would be to give it a common technical meaning in the sense of a sewage, or train, or subway, or telephone “network”. Recent technologies have often the character of a network, that is, of exclusively related yet very distant element [sic] with the circulation between nodes being made compulsory through a set of rigorous paths giving to a few nodes a strategic character. Nothing is more intensely connected, more distant, more compulsory and more strategically organized than a computer network. Such is not however the basic metaphor of an actor-network. A technical network in the engineer’s sense is only one of the possible final and stabilized state [sic] of an actor-network. An actor-network may lack all the characteristics of a technical network—it may be local, it may have no compulsory paths, no strategically positioned nodes. (1999b:1)

Thus, Actor-Network Theory has very little to with the study of social networks (Ibid.:2). It aims to account for the “very essence of societies and natures” and it contributes more to ontology and metaphysics than to sociology, Latour argues (Ibid.). While Actor-Network Theory was devised to rethink more globally-functioning concepts such as institutions, organizations and states in an attempt to describe the very nature of societies, the agency of non-human entities (machines, animals, texts and hybrids, among others), the ANT network is conceived as a “network” of associations between *volitional* actors, termed *actants,* that can associate or disassociate with other non-human agents in creating realities. Thus, the actors within the three case studies are combinations of symbolically invested “things”, “identities”, meanings and relations, conveyed through materials, images and real human beings that nest within multiple “networks” and their reflexive practices that carry them.

In an attempt to explore the social, cultural and political relevance of the three case studies, the thesis ventures into the prospects of a new socio-epistemological perspective for cultural work and workspaces for knowledge which includes the (re)design of the processes of cultural and scientific learning, and the quest for alternatives modes of governance of science and technology (chapter 4

Epistemology of Post-Industrial Cultural Work). It is important to note that the different kinds of actors chosen for analysis in the three studies (over potential others) contribute to a perspective that shares some similarities with Foucauldian material-semiotics and borrows from Foucault's conception of power and knowledge. While the studies investigate both the agency of human actors and the kinds of (techno-)socio-cultural knowledge spaces which they construct, the material-semiotic properties of the non-human entities such as the objects in the Gotthard Base Tunnel exhibition and the film stills of *Manufactured Landscapes* play a crucial role. Yet, instead of subjecting the entire empirical material (the entire exhibition and the entire film) to a detailed analysis, I have chosen distinct objects and film stills whose properties have a particular semiotic, material, epistemic or social relevance with regard to the enactment of materially and discursively heterogeneous realities and their politics, the very reality of societies or world-building, and the diffusion of knowledge in socio-epistemological-political terms. Thus, my analysis of the empirical material in these two studies constitutes a synthesis of descriptions and reflections, interwoven into my theoretical understanding of cultural work and the production of knowledge. From a theoretical point of view, the actual number of objects is of secondary significance. What is relevant is the potential of the narrations to aid in developing theoretical insights into the field being studied (Taylor and Bogdan 1998:93), that is: into the understanding of the agency of cultural work and knowledge-making within different (socio-)material-semiotic settings. In a similar vein, the case study of *Fairytale* explores the cultural, economic, epistemological and political interrelations of an arts-based public dialogue project, as I am particularly interested in exploring this living art event from the perspective of its socio-material-semiotic dimensions, that is: as both an ontological and socio-political system (space) and the heterogeneous amalgamation of conceptual, cultural, technical and financial actors providing substance and action, both collective and individual. From a more global point of view, it can be said that each of the three case studies provides analyses of the material-semiotic responses to and reverberations of technological, economic and cultural change with the central aim of extrapolating issues raised regarding the principles, practices and philosophical underpinnings of humanities- and arts-based civic dialogue work.

"Material Semiotics" and the Extension of Culture

Actor-Network Theory as a diaspora (Law 2009a:142) overlaps with other intellectual traditions, and "material semiotics" is perhaps the better term for it, as it entails the "openness, uncertainty, revisability, and diversity of the most interesting work", as Law claims, and is not a "creed or a dogma", but "at its best a degree of [intellectual] humility" (Ibid.). The three case studies explore different practices conducted in different ways by drawing on a range of theoretical resources and knowledges. The key interest of the studies lies in understanding how realities and their politics as specific assemblages of knowledges and relations are enacted. This means more precisely "how" realities are created in the form of civic dialogues and as a result of cultural work practice and the transfer of knowledge. In particular:

- "how" the strategy of cultural actors in devising the Gotthard Base Tunnel exhibition (a public techno-socio-cultural space of knowledge designed as a civic dialogue system) is impacted

by economic, political, governmental and historical circumstances and conditions.

- "how" cultural workers in the case of *Manufactured Landscapes* act as reflexive, political and moral actors in constructing a public two-dimensional "space" of knowledge for civic reflection.

- and "how" *Fairytale*'s engagement in constructing a social and epistemological space may be seen as an attempt by the self-producing strategies of cultural and political actors to create opportunities for civic dialogue.

There is no "overall view" intended in the three studies in terms of claiming a kind of objectivity. Instead the aim is rather to extend culture and thus reflect on physical reality, social practices and their semiotics which lead to cultural claims and knowledge-making through the cultural work of different actors in the world. The resources of the studies are (socio-)material-semiotic constructions and entities that are related to the agency of building meaning in society.

While the heterogeneity of the case studies is significant in itself, the actor-network approach and material semiotics are treated in each study in slightly different ways. I have chosen three different case studies in order to think about how knowledge is culturally produced and to explore the "material semiotics" of the underlying practices that lead to diverse cultural claims and corresponding realities. The actor-network approach serves as an exploration into what Law conceives as the "strategic, relational, and productive character of particular, smaller-scale, heterogeneous actor networks" (2009a:145). As relations are not only materially and semiotically assembled and the hidden involvement of the networked whole of human and non-human actors plays an essential role, these practices work in various ways as we can observe the different kinds of actors in the world by paying attention to power, to space and scale, and to the political contexts by undoing diverse dualisms such as human and non-human, meaning and materiality, big and small, macro and micro (Law 2009a:147).

In my conclusions to the case studies, I will reflect on how Actor-Network-Theory has served as a conceptual and methodological tool for the exploration of cultural practices (and its limits) and the creation of different (techno-)socio-cultural spaces of knowledge. While I will present my reflections on the empirical investigations into these practices from the perspective of Actor-Network Theory, I will briefly address the major strands of its criticism (Walsham 1997). In the case study of the Gotthard Base Tunnel exhibition the nature of the criticism of Actor-Network Theory's problems with description will be articulated, and in *Manufactured Landscapes* ANT's criticised stance on moral and political issues will be elaborated upon. Finally, in the case study of *Fairytale,* I will discuss the criticism that Actor-Network Theory addresses the local and contingent, but pays little attention to the wider social structures. Personal views of the relevance of these criticisms for my research will be offered.

Cultural Work and the Construction of a Techno-Socio-Cultural Space of Knowledge

"Cultural work" in the present age encompasses a variety of heterogeneous activities. Cultural labourers work as "cultural activists" in diverse professional fields, societal contexts, and contingent

environments. As “intermediaries” under the mandate of science and governance and related areas of philosophy, sociology, policy analysis and law, for example, as well as participants from public cultural interest, and art and media institutions, they work as “curators”, “arbitrators” and “mediators” in the business of grasping and defining social, economic, political and cultural issues or realities. Thus, in a sense, “cultural work” is a more intangible and abstract process (as I have outlined in the Introduction), and although emblematic terms such as “information manipulator”, “programmer”, “innovator”, “facilitator”, “fashionista”, “maverick” or “social/cultural entrepreneur” etc. aim to give it a concrete and solid face, the purported differences in action and scope are nominal. If I am right in my analysis, then these terms underpin the existence of an as yet unexplored contingency and incommensurability of knowledge-making in cultural environments and humanities- and arts-based civic dialogues, practices and projects. With the intention of venturing into a more open understanding of post-industrial culture and *knowledge* as the basis of this thesis in an attempt to blend present heterogeneous cultural work practice and human knowledge-making (Figure 2.1), I will examine these issues from within the economic, political and epistemological scope of humanities- and arts-based civic dialogues and projects, and the intellectual and cognitive cultural work and *epistemic* trajectories underlying them. My analysis of the Gotthard Base Tunnel exhibition in the next section examines therefore the circumstances and contexts (economic, political, governmental, historical, scientific and epistemological) that impact the intellectual and anthropological strategy of “cultural workers” in constructing a techno-socio-cultural and public space of knowledge. The study ventures into the cultural representation of technoscientific knowledge, and provides a compelling discussion of the kind of reflexivity that cultural workers seek to promote in industrial contexts of cultural production. Providing a material-semiotic response to the technological, economic and political challenges of boring a railway tunnel through the Alps, the Gotthard Base Tunnel exhibition employs a range of knowledge approaches and educational formats to stimulate discussion about these themes within a public display. The case study’s exploration of civic dialogue methods raises key questions about the importance of conveying knowledge in fields of science and governance.

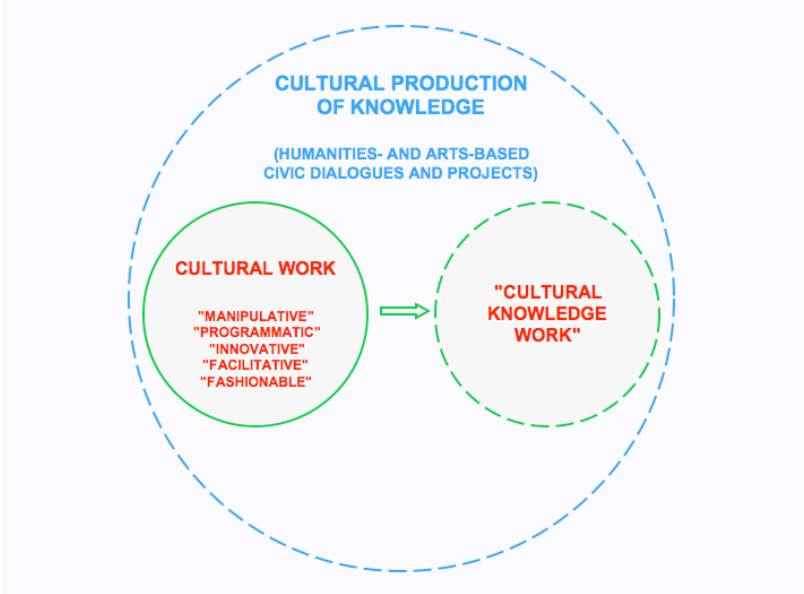


Figure 2.1

There are different ways of programming a cultural space of knowledge in creating “dialogic” interpretative displays, and responsiveness to civic issues. As “civic dialogue-makers” and decision-makers “cultural workers” play an important role. What educational and societal impact do their decisions have? And what are the economic, political, moral and socio-cultural issues (and forces) underpinning the Gotthard Base Tunnel exhibition in constituting a socio-cultural space of knowledge? The aim of the three subsequent case studies is to develop a rationale for an “epistemology” of cultural work, and to help articulate ideas and harvest new knowledge in order to venture into the idea of a more ecological and more sustainable perspective for the cultural workplace. Yet, are there “alternatives” of cultural production suited to provide significant and reflexive counterpoints to the unsustainable and unecological material worlds that we have created? And will cultural work in the age of information, corporate knowledge work, and the ruling rationalities of market culture be permitted to obtain a foothold in a “knowledge space” different from the one it finds itself strongly embedded in the present spatial-temporal organizations and activities of the dominant capitalist cultural industries? The following chapters will consider these questions.

2.1 Building a Transalpine Railway Tunnel and Manufacturing a Public and Transient Cultural Space of Knowledge (Case Study 1)

> The Navy's organization is profoundly modified by the way its offices are allied with its bombs; EDF and Renault take on a completely different look depending on whether they invest in fuel cells or the internal combustion engine; America before electricity and America after are two different places; the social context of the nineteenth century is altered according to whether it is made up of wretched souls or poor people infected by microbes; as for the unconscious subjects stretched out on the analyst's couch, we picture them differently depending on whether their dry brain is discharging neuro-transmitters or their moist brain is secreting hormones. (Latour 1993:4)

To understand the public role of humanities- and arts-based civic projects and the knowledge they involve, I will venture into an assessment of several aspects of their social function that in this case study are a pressing concern with regard to the practices of cultural work. I am specifically interested in the testimony of the *work* of human actors to whom I will refer as *cultural workers.* Following initially more descriptive approaches, my key interest is in the *invisible* networks of human and non-human actors, and our involvement with collectives and objects.[40] These networks are the very substance of our societies. They are not visible, Latour argues, but even more so *invisible*—like spiders' webs (1993:4). Latour's examples at the outset—the transformation of culture through the invention of electricity and thus the hidden involvement of a networked whole of human and non-human actors, for example—explain this aspect best. It can be said that rhetoric, ideology, epistemology, staging and value-attributing etc. have their roots in the subtle networks of the kinds that Latour describes. In other words, these networks *constitute* an immaterial stage on which human knowledge, reflexivity, politics, hybridisation, sophistication, production, entrepreneurial-oriented behaviours and timely actions—our treatment of the post-industrial world—are performed.[41]

Photo-Material-Semiotic Journey

In dealing with the tunnel construction, the Gotthard Base Tunnel exhibition is seeking to provide knowledge and information about numerous technological and science-based issues. Among them

[40] I use the word *collective* in Latour's sense: as a description of the relationship between humans and non-humans.
[41] For Manuel Castells human productivity is a function of knowledge generation. According to Castells, the post-industrial world, the economy, firms and their territories are altogether organised in networks of production, management and distribution whose core economic activities are global with a capacity to work "as a unit in real time, or chosen time, on a planetary scale" (2000:52).

figure the state-of-the-art technology of new computer-controlled tunnel boring machinery and surveyors and satellite systems to map the tunnel, safety matters on the various construction sites, and the exhibition's implicit concern in promoting future faster trains, better connections, quicker journeys, and mobility and environmental issues. Relying on a small portion of a huge amount of facts and figures about constructing a transalpine tunnel and the future of rail transportation and freight traffic across the Alps, I have decided to look at the material-semiotic "objects" in the exhibition from a photo-philosophical perspective in considering them as an account of humanities- and arts-based knowledge and outcome of cultural work. The pictures taken with my camera document my photo-material-semiotic journey based on selected components of the exhibition. While I will reflect on the inherent connections between knowledge representation and cultural production—creating public awareness of the "most far-reaching environmental project Switzerland has ever known"[42] through civic dialogue practice—I ask the following questions: What is the role of the exhibition in generating an information platform and in serving as a catalyst for knowledge exchange in civic issues? How does the exhibition serve as a public forum for "dialogue" about civic issues? And what is the role of a "science-based" exhibition? Further legitimate questions are: What can humanities- and arts-based civic dialogues such as the Gotthard Base Tunnel exhibition contribute—by providing knowledge and public information—to the larger discourse about the implications of technoscientific knowledge and the sustainability of society as a whole? And how do civic dialogues as built-spaces of knowledge shape both the forms and our orientations in collective life?

For this study, I have chosen one of the three "InfoCenters" or Visitors' Centers located in the villages of Erstfeld, Pollegio, and Sedrun.[43] The photograph below was taken during the winter of 2008/2009 (Figure 2.2).[44] The red-coloured Exhibition Center is housed in a flat and long edifice, and easily identifiable from afar by any visitor approaching the tunnel construction site.[45] A typical building

[42] See *The New Gotthard Rail Link*. AlpTransit Gotthard Ltd. (Ed.) (2005:47).

[43] Following an announcement in 2001 by the cantonal governments of Uri and Ticino, and AlpTransit Gotthard Ltd. calling for the submission of architectural concepts for the two planned Exhibition Centers at Erstfeld and Pollegio, the public response consisted of 27 project proposals. The winning project was realised between 2001 and 2003 at Pollegio in the Italian-speaking part of Switzerland using excavated rock from the tunnel, and an impressive and partly transparent building structure containing technologically-based digital features and functions such as audiovisual presentations etc. According to Ambros Zgraggen, media spokesman for AlpTransit Gotthard Ltd., the realization of the Visitors' Center at Erstfeld was "politically problematic". While the concept of creating a "modern" and emotional exhibition ambience for visitors by providing strong architectural contrasts between "permanence" (the tunnel) and "impermanence" (information and communication) was not questioned since it had been realised successfully at Pollegio, the large financial involvement of the state in the entire tunnel project became a public issue at that time to which the Swiss population had been sensitised due to extensive media coverage. The high costs of 10 million Swiss francs previously spent on the Center in Pollegio caused AlpTransit Gotthard Ltd. to reframe the project because of the expected and undesirable criticism from taxpayers. As a consequence, the Erstfeld Exhibition Center was realised as a modest hut version with costs amounting to 1 million Swiss francs. Both exhibition sites, Pollegio and Erstfeld, were realised with identical concepts regarding show content, and the information and knowledge which they display. I have chosen the Erstfeld exhibition site for my study because it is located near Lucerne where I live.
(Sources: Unterschütz 2002a; <http://www.bauzeit.com/content/public/detail.php?cat=2&subcat=3&ID=59> downloaded 4 February 2009; and an interview between the author and Ambros Zgraggen, media spokesman, AlpTransit Gotthard Ltd. which took place on 20 January 2009).

[44] The Erstfeld section is the most northerly section of the tunnel. The first part of the Erstfeld section was constructed by digging an open trench which will be covered over again after completion. The rest of this section will be cut with tunnel boring machines. (Source: *The New Gotthard Rail Link.* AlpTransit Gotthard Ltd. [Ed.] 2005:18).

[45] Since its inception in March 2008 until December 2008 about 20,000 visitors have come to see the exhibition at Erstfeld in order to learn about the future prospects for rail traffic through the Alps. (Source: *Über 20'000*

employed on industrial and laboratory research sites around the globe, the structure first reminded me of the famous World War II huts at Bletchley Park.[46] The installations in the background resembling a roller coaster are conveyor belts. They are part of the site's large networked surface installations and pipelines which provide access and connections, water supply and electricity, or facilitate the transportation of the excavated rock to the surface.[47]

Figure 2.2

Historical, Political and Economic Significance

Initially, my focus is on the historical, political and economic significance of constructing the Gotthard Base Tunnel. The idea of building a Gotthard Railway Base Tunnel is not new; the first such proposal was put forward as early as in 1947, over half a century ago. The first project was incepted by the Swiss Federal Department of Home Affairs in 1962. The acceptance of the proposals for the New Rail Link through the Alps (NRLA) in 1992, as part of the creation of the pan-European network of high-speed railways provided the basis for planning (see Figure 2.3 below *The European High-speed Rail Network in 2020*).[48]

Besucher im InfoCenter Erstfeld. Press release [in German], AlpTransit Gotthard Ltd., 19 December 2008). In comparison, the Museum of Art Lucerne (the largest institution in Central Switzerland dedicated to contemporary art) had 46,000 visitors in the same period. Personal mail dated 22 January 2009 to the author from Doris Bucher, Head of Communications, Museum of Art Lucerne.

[46] Bletchley Park, National Codes Centre, Milton Keynes, England, the location of the UK's main codebreaking establishment during World War II.

[47] The conveyor belts move the estimated 24 million tonnes of excavated rock, the fivefold volume of Gizeh's pyramid of Cheops and "a veritable mountain from under the Alps", from many kilometres inside the Alps to the construction site on the surface. (Source: *The New Gotthard Rail Link*. AlpTransit Gotthard Ltd. [Ed.] 2005:30).

[48] See *The New Gotthard Rail Link*. AlpTransit Gotthard Ltd. (Ed.) (2005:2). The new Gotthard Rail Link constitutes an essential backbone for the *Trans-European-Network-Project* Number 24 (freight corridor)

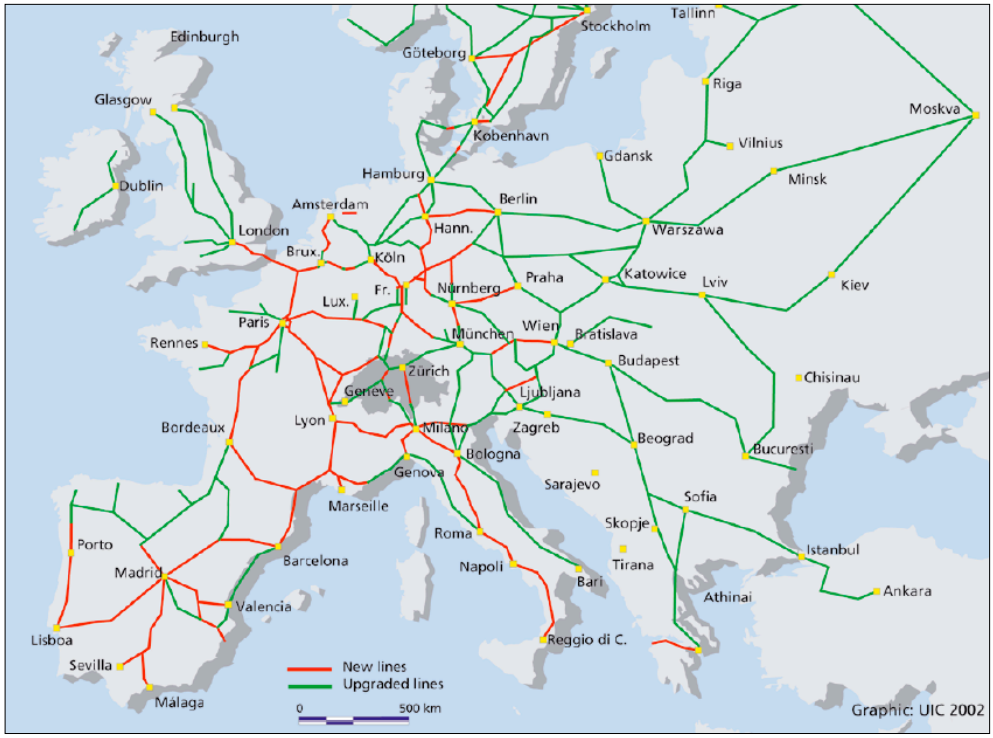


Figure 2.3

The acceptance of the Heavy Vehicle Tax (HVT) in 1998, as well as the proposal for modernization of the railways, finally cleared the way for construction. The history of the Gotthard is the history of transportation, and road and tunnel construction due to its geographical importance as the shortest road link from Hamburg, Germany, to Sicily in Italy.[49] The route over the Gotthard Pass (which opened around 1220, creating new impetus for economic growth via the movement of merchants and travellers) or through one of its tunnels is one of the most important passages through the Alps on the north-south axis in Europe. Today, several tunnels provide access through the pass. The 15km Gotthard Rail Tunnel was built from 1872 to 1882 at a cost of hundreds of workers' lives. It replaced the pass road. Its construction was difficult due to financial, technical and geological issues, the latter leading to the death of workers mainly due to water inrushes; many workers were also killed by the compressed air-driven trains transporting excavated material out of the tunnel.[50] A violent strike by workers occurred in 1875 due to bad working and living conditions.[51]

As a response to the automobile boom in Switzerland and the popularity of Italy as a travel destination, a 17km motorway tunnel, the Gotthard Road Tunnel, opened in 1980. It was closed for

connecting Rotterdam to Genoa (Kallas and Truttmann 2010:3) as an important part of the pan-European network of high-speed railways.

[49] The *St. Gotthard Pass* (Italian: San Gottardo, 2108m above sea level) is a high mountain pass between the village of Airolo in the canton of Ticino, and the village of Göschenen in the canton of Uri, connecting the northern German-speaking part of Switzerland with the Italian-speaking part along the route onwards to Milan. As early as 1237, it was dedicated to the Bavarian Saint *Gotthard of Hildesheim (Monte Sancti Gutardi)*. (Sources: Mäder 2002:179-97; and *Historisches Lexikon der Schweiz* [HLS] <http://www.hls-dhs-dss.ch/textes/d/D7466.php> downloaded 3 July 2009).

[50] See *Historisches Lexikon der Schweiz (HLS)* <http://www.hls-dhs-dss.ch/textes/d/D7962.php>; AlpTransit Gotthard AG Home: <http://www.alptransit.ch/fileadmin/documents/PDF/geschichte.pdf> downloaded 15 October 2010.

[51] See Schnieper (2002:147) and *Historisches Lexikon der Schweiz (HLS)* <http://www.hls-dhs-dss.ch/ textes/ d/D16386-3-6.php> downloaded 3 July 2009.

two months in 2001 following a lethal fire.[52] The new Gotthard Base Tunnel, combined with two shorter tunnels planned near Zurich and the Swiss city of Lugano in the canton of Ticino as part of the AlpTransit initiative, will reduce the 3 hour and 40 minutes rail journey from Zurich to Milan by one hour, while increasing the size and the transit capacity up to 300 trains per day that can operate along the route.[53] Traffic through the Alps on the north-south axis has increased more than tenfold since 1980 and the existing road and rail tunnels are at their limits.[54] The road tunnel sees an immense amount of traffic and is often subject to traffic jams at both the north and south ends. In order to ensure a faster and smoother passage through the Swiss Alps, the Swiss voters have decided to build this tunnel cutting through the Gotthard massif at nearly ground level, 600 metres below the existing railway tunnel. On the current track, the Gotthard Bahn, only limited freight trains with a maximum weight of 2,000 tons are able to pass through the narrow mountain valleys and through spiral tunnels climbing up to the portals of the old tunnel at a height of 1,100 meters above sea level. Once the new tunnel is completed, standard freight trains of up to 4,000 tons will be able to pass this natural barrier as easily as if the Alps did not exist.[55] Because of the ever increasing international large goods vehicle (LGV) traffic, the Swiss voted in 1994 for a shift in transportation policy (*Traffic Transfer Act* of 1999).[56] The goal of both the law and the goal of the Gotthard Base Tunnel, which is one of the means by which the law will achieve its objectives, is to transport LGVs, trailers and freight containers from southern Germany to northern Italy and vice versa by train to relieve the already overused roads, and to meet the political requirement of shifting as much tonnage as possible from LGV transport to train transport (*Alpine Protection Act* of 1994; German: "Alpen-Initiative" [Alpine Initiative]).[57] Efforts to build a second tunnel have failed, blocked by political resistance, but are currently being reinvigorated.[58] The Alpine Initiative for the protection of the Alpine region from transit traffic which raised barriers against road tunnel construction, was initially blocked by the Swiss Parliament. However, in 1994 it was passed by 52% of voters, and Parliament upheld the referendum twice throughout the 1990s. The pro-tunnel *Avanti Initiative* brought a referendum[59] to voters in 2004, which was rejected by 62.8% of the electorate.[60]

Anthropological "Field Walk"

The devised concept consists primarily in providing information and data with regard to the technological challenge that the construction of the 57km railway tunnel entails. A total of 26 different

[52] See <http://en.wikipedia.org/wiki/Gotthard_Road_Tunnel> downloaded 4 July 2009.
[53] See Steinmann, N., Favre, P. (2003). *Building a Modern Railway Line in the Gotthard Base Tunnel*. Lucerne: AlpTransit Gotthard AG.
[54] See <http://en.wikipedia.org/wiki/Gotthard_Base_Tunnel> downloaded 14 January 2009. Until the opening of the Gotthard Road Tunnel in 1980, the Swiss Federal Railways offered piggyback services for cars and LGVs through the Gotthard Tunnel. Today, that service exists as the *Rolling Highway* from the German to the Italian border and aims to reduce LGV traffic on Swiss motorways. See <http://en.wikipedia.org/wiki/Rolling_highway> downloaded 3 July 2009.
[55] See *The New Gotthard Rail Link.* AlpTransit Gotthard Ltd. (Ed.) (2005:10).
[56] See <http://www.bav.admin.ch/glossar/index.html?lang=en&action=id&id=110> downloaded 14 January 2009.
[57] See <http://www.alpeninitiative.ch/e/ProtectionOfTheAlps.asp> downloaded 14 January 2009.
[58] See <http://www.gotthardtunnel.ch> downloaded 3 July 2009.
[59] A *referendum*, *ballot question*, or *plebiscite* is a direct vote in which an entire electorate is asked to either accept or reject a particular proposal.
[60] See <http://en.wikipedia.org/wiki/Gotthard_Road_Tunnel> downloaded 14 January 2009.

exhibition displays, info-terminals, video screens and display cases have been designed, several of which I have selected for this study. Being something of a cultural epistemologist, I will follow these displays and study them from a material-semiotic and empirical perspective. In contrast to Latour's field trip in the Amazon Forest, where he pursued the sampling of soil under *laboratory conditions*, my anthropological "field walk" through this built-space and its "objects" is an encounter with dissimilar conditions and circumstances. I cannot take "specimens" of these human-made artefacts, images, models, videos and digital animations etc., unlike a biologist in nature, or a pedologist (a soil scientist) by digging a hole in the ground and taking a sample of soil. I am "only" allowed to look at what is (re)presented, collect information on paper, or take pictures with my camera. Walking through the exhibition, there are many perspectives from which to describe its undisputed and constructed "reality". I will follow the cultural entities that evolve before my inner eye as something of a "precon-structed universe"—a metaphor which Bruno Latour and Steve Woolgar have used for the laboratory in science (1986:236). What are the dialogic intentions of this audiovisual material-semiotic universe and manufactured transient *cultural laboratory* (as I want to call it) offering the general public an understanding of the issues involved in boring a railway tunnel through the Alps?

The Spiritual Dimension of Western Culture

My "field trip" into the heart of the Swiss Alps to the Gotthard Base Tunnel exhibition near the Swiss village of Erstfeld requires only little knowledge. I will rely on Latour's prescription for an anthropology of science which I will adapt to the "cultural context" and the invisible matrices and contingent negotiations by which our technological, technoscientific, political and economic knowledge-of-reality is solidified. My interest is in the ontological and epistemological dimensions and networks underlying the exhibition's visual vocabulary. I also want to examine what is involved in an attempt to create a cultural space of knowledge and the kind of "knowledge work" this involves. I start my visit to the exhibition with a prominently placed first display in the hallway just next to the entrance. It contains a small three-dimensional statue of a popular woman venerated by many and whose life is threatened by sudden and violent death at work (Figure 2.4). The figure—Saint Barbara[61]—is often depicted standing by a tower; here she holds a miniature tower in her left arm. Saint Barbara is best known as the patron saint of artillerymen, armourers, military engineers, gunsmiths, miners and anyone else who works with cannons and explosives because of her legend's association with lightning.[62] I am

[61] Saint Barbara, known in the Eastern Orthodox Church as the *Great Martyr Barbara*, was a Christian saint and martyr. Although the legend of Saint Barbara is included in the *Golden Legend* (and in William Caxton's version of it), and although she was one of the most popular saints of the Middle Ages, some scholars doubt its veracity and even her existence. Because of these doubts about the historicity of her legend, she was removed from the official Catholic calendar in 1969. (Sources: Unterschütz 2002b:157-59; and <http://en.wikipedia.org/wiki/Saint_Barbara> downloaded 5 January 2009).

[62] According to the legend, she was guarded by her father, who kept her shut up in a tower in order to preserve her from the outside world and from becoming a Christian. During her father's absence Barbara had three windows put in the tower, as a symbol of the Holy Trinity. When her father returned, she confessed to being a Christian. When her father discovered she was a Christian he wanted to kill her, but her prayers created an opening in the tower wall and she escaped. Pursued by her father and guards, she hid in a gorge in the mountains. She stayed hidden there until a shepherd betrayed her. As legend has it, the shepherd was transformed into a marble statue and his herd into grasshoppers.
(Sources: Unterschütz 2002b:157-59; and <http://en.wikipedia.org/wiki/Saint_Barbara> downloaded 5 January 2009).

consumed by such materialised representation; I see both the thinking and what is being articulated in material-semiotic terms, entangled in what Haraway regards as “different kind of knots” (1997:23), that is, values and shared meanings implied in the heterogeneity of the aspirations and ventures of the humanities and the arts traditionally concerned with these issues, as Gibbons et al. have pointed out (1994:7).

Figure 2.4

A figure such as that of the female martyr whose real existence is doubtful brings together people, embodies shared meanings, and mirrors authority in the framework of her artefactual representation by avoiding questions about the transcendental foundations (the truth and its problems) in which it is embedded. This is what Haraway so suggestively describes in her reference to the astounding power of narratives that turn into “clear mirrors, fully magical mirrors, without once appealing to the transcendental, or the magical” (1997:24). With the decision to use the Christian patron saint of the miners front and centre, the Gotthard Base Tunnel exhibit—manufactured through cultural work and knowledge—draws on the spiritual dimension of Western culture, and thus on the continuous contentions of religion and politics. My extended argument here is that in the context of the techno-scientific enterprise of building a tunnel through the Alps, science and technology, commerce and politics (as we will see), cultural and religious values, and human knowledge are mixed into a cocktail, like Tequila and orange juice to which some ice cubes are added.

Identification and Liberation Figure

Upon entering the exhibition's main hall, we encounter William Tell (Figures 2.5), a glass-fibre- reinforced polyester figure of the original statue in the nearby village of Altdorf, which was created in 1895 by Richard Kissling.[63] Another display opposite Tell with an interactive relief map informs visitors about the canton of Uri and its ethnographic, political, economic and touristic peculiarities, promoting this region in the heart of Switzerland with its snowy mountains, glaciers, waterfalls and rivers. William Tell is depicted as a peasant and man of the mountains, with strong features and muscular limbs, a legendary Swiss hero of disputed historical authenticity who is said to have lived in the Alpine canton of Uri in the early 14th century and to have been punished by being forced to shoot an apple off the head of his son, Walter. The original sculpture shows Tell's hand resting on the shoulder of his son. The depiction is in marked contrast to that used by the Helvetic Republic, where Tell is shown as a "landsknecht"[64] rather than a peasant, with a sword at his belt and a feathered hat, bending down to pick up his son, who is still holding the apple.[65]

Figures 2.5

[63] Richard Kissling (1848–1919) was a Swiss sculptor. See *Historisches Lexikon der Schweiz* <http://www.hls-dhs-dss.ch/textes/d/D22475.php> downloaded 4 July 2009.
[64] A *landsknecht* was a European, most often German mercenary pikeman. See <http://en.wikipedia.org/wiki/Landsknecht> downloaded 5 January 2009.
[65] See <http://en.wikipedia.org/wiki/William_Tell> downloaded 11 January 2009.

Visitors are invited to position themselves beside the statue as the "son" or "daughter" of Tell.[66] While Tell lives on as a hero in popular culture—a liberation figure whose real existence can be dismissed as fiction—the Gotthard Base Tunnel exhibition presents him as a hero and identification figure.[67] Such material-semiotic and multicoded disneyfied representation (to put it mildly) raises questions about how particular cultural meanings come to be produced, why, and based on what interests, as McCarthy points out (1996:26).

Psychological Account of the Human Capital

Having moved on by postponing the answer to my questions, I stand now opposite the next display (Figure 2.6), an impressive installation with nine video monitors. On each monitor, three successive short portraits of tunnel workers, engineers or miners are presented, 27 in total. This is a small fraction of the total workforce of the 2,500 labourers who are employed on the five construction sites.[68] In this video installation, the cultural workers' decision to provide a lively physical, intellectual and psychological account of the *human capital* (Smith)[69] involved in building the tunnel is evident. The presentation of 27 individuals in total, their succinct personal testimonies about their professional background, social relations, experiences of working in the tunnel, comments on family relations while abroad, salary conditions in Switzerland etc., not only provides insights into these people's thinking and subjective mental states, but also allows visitors to grasp the concrete human dimension that the construction of the tunnel deep under the Gotthard massif entails. Coming from different ethnic and social backgrounds, especially the Austrian miners express great satisfaction with the money earned in Switzerland, claiming that the pay for comparable work is higher in Switzerland than in places where they had worked previously in Austria. However, much of what we might like to know in more detail about these individuals and their heroic lives remains unarticulated in the short film sequences. It becomes clear that what we can hastily grasp from the testimonies points beyond these short stories on digital screens.

[66] The pictures can be downloaded from the Visitors' Center's website <http://besucherzentrum-uri.magix.net>. The ones depicted in Figure 2.5 are screenshots from the website taken on 12 February 2009.

[67] According to the legend, William Tell was known as an expert marksman with the crossbow. At the time, the Habsburg emperors were seeking to dominate Uri Hermann Gessler, the newly appointed Austrian *Vogt* (an overlord over ecclesiastical institutions and their territory) of Altdorf raised a pole in the village's central square with his hat on top and demanded that all the local townsfolk bow before it. As Tell passed by without bowing, he was arrested. He received the punishment of being forced to shoot an apple off the head of his son, Walter, or else both would be executed. In 1891 Wilhelm Öchsli published a scientific account of the founding of the confederacy (commissioned by the Swiss government for the celebration of the first Swiss national holiday on August 1, 1891), and dismissed the story as fiction. Yet, 50 years later in 1941, when Tell had again become a national identification figure, the historian Karl Meyer tried to connect the events of the saga with known places and events. Modern historians generally consider the saga to be fiction, as neither Tell's nor Gessler's existence can be proven. According to a survey, however, 60% of the Swiss believe that William Tell really lived. Historians continued to argue over his saga until well into the 20th century. See <http://en.wikipedia.org/wiki/William_Tell>; and *Historisches Lexikon der Schweiz* (HLS) <http://www.hls-dhs-dss.ch/textes/d/D17474.php> downloaded 11 January 2009 with regard to issues about the liberation tradition in Switzerland and its representatives.

[68] The figure was given to the author by Ambros Zgraggen, media spokesman, AlpTransit Gotthard AG, on the occasion of the interview which took place on 20 January 2009 in Lucerne.

[69] The Scottish philosopher and pioneer of political economics *Adam Smith* (1723–1790) defined *human capital* as the stock of skills and knowledge embodied in the ability to perform labour in order to produce economic value.

Figure 2.6

Digging the Longest Underground Passage on Earth

To provide an awe-inspiring feeling of the true power needed to gain supremacy over nature with its geological uncertainties and the unknown physical consequences of drilling and blasting, a machine constitutes the heart of the Gotthard Base Tunnel exhibition.[70] To accomplish the ambitious aim of digging the longest underground passage on Earth, so-called *gripper tunnel boring machines* are used. A full-scale reconstruction of the control cabine and a model demonstrating the enormous physical dimensions of this technoscientific superstructure with a length of 440 metres (Figures 2.7, and 2.8) are displayed.[71] “From here” (the control cabin), the official exhibition guide tells visitors, “the machine drivers control almost all of the machine’s power units while cutting the tunnel”. Compared to a cockpit of a modern passenger airplane, the cabin with its data screens offers a more unspectacular insight into the control centre of this human-made technological monster. From here, we might imagine steering this earthworm deep inside the mountain floodlit in artifical white light, and perhaps we might even press an imaginary button in order to make the huge grinding head and cutting wheels of an impressive 19 meters in diameter rotate.

[70] *The New Gotthard Rail Link.* AlpTransit Gotthard Ltd. (Ed.) (2005:16, 28).
[71] Tunnel boring machines are used as an alternative to drilling and blasting methods in rock and conventional “hand mining” in soil. In the US, the first boring machine to have been built was used in 1853 during the construction of the *Hoosac Tunnel* (Western Massachusetts). See <http://en.wikipedia.org/wiki/Tunnel_boring_machine> downloaded 19 January 2009.

Figure 2.7

Figure 2.8

Or else we might imagine the energy consumption of 2,500 cooker hotplates or 50,000 light bulbs equalling the electric power needed to run a tunnel boring machine.[72] But our mental grasp of the

[72] On peak days the construction site requires a power supply of around 11 megawatts, twice the demand of the village of Sedrun—one of the five main construction sites—at Christmas with full hotels and all the ski lifts in the area running. (Source: *The New Gotthard Rail Link.* AlpTransit Gotthard Ltd. [Ed.] 2005:25).

noise of drilling, explosions, dust, and the massive heat at the construction site which reaches 45°C and is cooled down to 28°C with water circulating in pipes fails to visualise the construction sites' remote *reality*.[73] Only an emblematic explosion on a video screen (Figure 2.9) shown every 30 minutes as a slow motion event with high-speed cameras offers visitors a virtual but also fragmented experience of the conditions which the workforce under the Gotthard are confronted with.

Figure 2.9

Cultural and Scientific Learning

At this point, I wish to make an intermediate summary of the orientation, awareness, and understanding of the issues involved that a civic dialogue system such as the Gotthard Base Tunnel exhibition provides. On the one hand, it provides audiences with the opportunity to understand issues of scientifically and technologically-driven progress required to build a railway tunnel through the Alps. On the other hand, the heterogeneous framework of economic, political and cultural forces which provide a substantial background to this venture, points to various social interests, values and knowledges that interfere with each other. In order to entice visitors on board the innnovation train, the cultural workers' decision is to offer a cocktail of technical, economic, environmental, historical and touristic ingredients. The selected information includes facts about the construction process and the site, figures on precision blasting and drilling, roller cutters, construction machinery, tunnel safety and

[73] The temperature of the rocks rises with increasing depth below ground. Since the Gotthard Base Tunnel has more than 2,000m of overlying mountain, rock temperatures up to 45°C are commonplace. Additional heat is generated by the numerous powerful machines. Extra cooling has to be installed at the tunnel faces. This is done in the form of water which is circulated in a system of pipes to remove heat from the rocks and machines. Using this method the atmosphere can be cooled down to 28°C. (Source: *The New Gotthard Rail Link.* AlpTransit Gotthard Ltd. [Ed.] 2005:35).

risk management, geological and climatological challenges, and foreseen difficulties, tunnel ventilation, geothermal energy, and problem-solving in the domain of recycling excavated rock etc. The construction of the longest railway tunnel in the world in the heart of Europe with estimated costs of 12 billion Swiss francs is embedded in the societal context of historically-rooted, geographically and politically-oriented, and economically-driven profound human stakes and pursuits.[74] In shaping society's choices and its struggle for progress, these issues are complex and driven by human interests, motivations, aspirations and market-oriented goals. The overall critical issue which I want to pursue is not concerned solely with the non-human actors' *talking* and *constituting* technological, economic and cultural evidence. Based on the key theme of the Gotthard Base Tunnel exhibition and its partners in devising a wide-ranging information platform that would appeal to diverse constituencies, but above all to broad lay audiences, my interest is in the kind of *instrumental enterprise* that the exhibition constitutes. The evidence of instrumental thinking is found in the diverse material-semiotic artefacts, powerful images, representations and objects, of which the display of the tunnel boring machine's control cabin is an example. Furthermore, the aura of the little statue of the Christian patron saint (Figure 2.4) mirroring her allegedly implicit faith in the doctrine of the Holy Trinity[75] (the central dogma of Christian theology) contributes to stabilising preferred visions of a socio-cultural and religious order.

The Sharing of Instrumental Knowledge

Between the opening of the InfoCenter in Erstfeld on 15 March 2008 and 2 June 2010, 26 reviews and articles were published about the exhibition site in local newspapers such as the *Neue Luzerner Zeitung* or the *Neue Urner Zeitung*.[76] Published exclusively in the German-speaking part of Switzerland, most of them appeared in 2008, after the exhibition's inauguration. This demonstrates a declining media interest once the exhibition had opened its doors. The emphasis of the reports lies on information regarding the location, exhibition content, number of visitors, public interest and political legitimation, budget and costs, and the promotion of local tourism and economic strengths in the canton of Uri etc. In most of the articles the main topics are the exhibition's major attractions such as the model /cabin of the tunnel boring machine, the film about the symbolic blasting, the statue of William Tell, the workings of the technical apparatus and technoscientific tools on the construction site, scientific and historical data of the tunnel construction and the Gotthard, the promotion of tourism, and the exhibition's costs. In a short article, the Swiss newspaper *Neue Zürcher Zeitung* referring to the exhibition's experiential scope, reported that potential visitors "will experience the construction site in the mountain".[77] No written evaluations or feedback material exists from teachers, educators, experts and the over 60,000 lay persons (bypassing travellers from abroad, school classes, students, visiting groups,

[74] Financing comes from heavy vehicles and oil plus loans, and a value added tax. The figure was given to the author from Ambros Zgraggen, media spokesman, AlpTransit Gotthard Ltd. on 20 January 2009 in Lucerne.
[75] See <http://www.orthodoxcentral.com/saints/saintbarbara.htm> downloaded 5 January 2009.
[76] Source: in possession of author.
[77] "Uri zeigt den Neat Tunnel". *Neue Zürcher Zeitung*, 15 March 2008. p. 19.

Swiss army soldiers, families, senior citizens etc.) who visited the site between 2008 and 2010.[78] No surveys were conducted during the same period or are planned in the future.[79]

In creating "dialogue opportunities", the exhibition is supplemented by two questionnaires (one consisting of 12 and the other of 24 questions) providing educators of youth audiences from schools and visiting groups with a range of content-based questions. By asking for brief replies and concise figures, these questions about, for example, the name of the miners' patron saint, the length of the access tunnel at the village of Amsteg, the name of the villages at both ends of the tunnel, or the company that constructed the tunnel boring machine etc. create a "dialogue" which is based on instrumental thinking and not on approaches as ends-in-themselves. It can thus be said that the exhibition's engagement is about promoting the sharing of instrumental knowledge that, in turn, builds trust in technoscience's promise within and across communities and society.

Evidence-Based Learning, (Self-)Reflexivity and Unlearning

To answer the question about the function of humanities- and arts-based civic dialogues in society and their contributions as producers of knowledge in the cultural field and globally-functioning knowledge cultures, I wish to venture into several aspects concerned with cultural and institutional learning, including scientific learning. In *Taking European Knowledge Society Seriously,* Felt, Wynne et al. introduce and highlight aspects of institutional learning from an STS perspective (2007:63-79). They discuss in particular issues of public unease with science by touching on dominant conceptions of learning in modern science-dominated cultures. According to Felt, Wynne et al., these cultures show a number of distinct defining assumptions about science, innovation and governance, such as that learning is primarily an instrumental enterprise. They claim that knowledge is "presumptively always about object-worlds and their means of behaviour manipulation, prediction, and control" (66). Furthermore, they argue that when it comes to uncertainty "learning categorically and progressively amplifies knowledge, reduces uncertainty and increases control" and that "learning is the improvement of deemed precision in such chosen key scientific-policy parameters or deemed objects as 'the climate sensitivity', 'sustainable development', or 'risk'" (Ibid.). By drawing on some of the report's conclusions which acknowledge that existing EU science and governance cultures sustain "dominant idioms of control and prediction" and obstruct "important dimensions of learning" (63), I wish to discuss these insights in relation to our cultural and institutional treatment of scientific issues. While Felt, Wynne et al. point to the "de-facto emphasis given to instrumental learning and knowledge" (Ibid.), they emphasise the importance of reflexivity and the necessity of a collective awareness and alternative view on issues concerned with the risks that our present knowledge entails. According to Felt, Wynne et al.:

> If we must become increasingly dependent on scientific knowledge's instrumental powers in technology, then developing (these) more reflective dimensions of collective awareness—including about risks of staking too much too early on the supposed certitude and exclusivity

[78] Source: in possession of author.
[79] Personal mail dated 15 February 2011 to author from Maurus Huwyler, deputy media spokesman, AlpTransit Gotthard Ltd.

> of existing knowledge, and about “roads not taken”—may become increasingly important, not less. (64)

Furthermore, by drawing on the public unease with institutional science in Europe—a critical issue arising in the context of the Gotthard Base Tunnel exhibition and related themes that involve technoscientific knowledge geared to lay audiences—, public issues involving science have made up, as Felt, Wynne et al. argue, a large part of the evidence-based learning of European publics, of “things done, in the name of science” (Ibid.). As an example of unstated commitments effectively operating as inadvertent assumptions, Felt, Wynne et al. adduce the seriously mistaken UK scientific and policy response to the 1986 radioactive caesium fallout from the Chernobyl nuclear accident in the English Lake District. It seems to me relevant to discuss this in the context of my investigations into the civic issue of building a tunnel through the Alps, and the vast technoscientific systems and social dimensions this involves. In the case of the radioactive caesium fallout, the mistaken scientific re-assurance was based on an “implicit scientific ‘assumption’ that when rained out of the atmosphere, the caesium would contaminate hill sheep on a once-through (one-pass) exposure only, before being washed off the surface vegetation eaten by sheep, and then locked-up in the soil” (65). “Learning in such cases”, the authors conclude, “requires more than learning to correct the false ‘assumption’” (Ibid.). In considering these issues from the perspectives of the general features of scientific knowledge for public policy and governance, and the perspective of evidence-based scientific knowledge provided by the Gotthard Base Tunnel exhibition, two little-recognised dimensions of learning processes that Felt, Wynne et al. have identified become salient. The first is the importance of “(self-)*reflective* reasoning, or indirect learning, as distinct from instrumental, direct learning alone”, and the second, according to the authors, is the “unrecognised dimension of *unlearning* which inevitably but silently accompanies disciplinary knowledge-production and instrumental learning processes” (Ibid.).

My point in invoking the contrasting issues of evidence-based and instrumental learning, and the possibility of (self-)reflexivity and unlearning—thought and practice for social learning—is twofold. On the one hand, my intention is to explore a critical perspective on what I have repeatedly and variably referred to as the societal function, cultural potential, and educational scope of the humanities- and arts-based civic dialogues. On the other hand, these issues also encompass an analysis of the role of cultural workers as cultural commentators of social and political domains, and they include reflections on cultural production and social learning within the industrial paradigm of economic knowledge and the continuous growth and impact of science and technology on a global scale. In the following conclusions, I reflect on the conduct and the role of cultural workers (cultural work) as (self-)reflexive, social, economic and political actors in creating a public and dialogic space. How is cultural work embedded in social, economic and political frameworks that shift arbitrarily under contingent conditions? What are the relations between cultural workers’ strategies, motivations and the mechanics of social regulation and “governmental” control? I additionally ask: What are the critical issues with regard to (self-)reflexivity, the practical dimensions of cultural (scientific) learning, and the contingency of knowledge?

2.1.1 Conclusions

The civic dialogue project of the Gotthard Base Tunnel exhibition constitutes a cultural response by institutional, economic, and political stakeholders in constructing a techno-socio-cultural space of knowledge. What the Gotthard Base Tunnel exhibition reveals is a stark commitment in dialogue to engaging audiences in an instrumental understanding and experience of technologically-based innovations and sweeping accounts, such as those which conflate "general societal 'progress' with technological 'advance'", as Felt, Wynne et al. point out (2007:73). With regard to our "deliberate" agreements as to *what* scientific knowledge should be publicly illustrated and performed, which is always, as Felt, Wynne et al. argue, beset with contingencies (69), my question is: How do our premises of control, social or technical and greater instrumental power (70)—our pursuits of an *ethic of control* to sustain the culture of instrumentalism—impinge on social worlds such as the "cultural laboratory" of the Gotthard Base Tunnel exhibition? To answer that question, I will take a closer look at one of the material-semiotic objects in the exhibition, the "human non-human" (as I want to call it) video installation of the miners, engineers and geologists, which appears at first glance neutral and undisputable (Figure 2.6). Yet, as much as biology is a semiotically-, morally-, economically- and institutionally-sustained political discourse, as Haraway argues (1997:104-5), or the "Theory of Everything" (TOE) envisaged by many physicists is, according to Margaret Wertheim, a "quasi-religious rather than a scientific goal" (1997:13), the testimonies of the Gotthard Base Tunnel workforce about personal matters such as complacency, pride, courage and commitment do not germinate in a societal vacuum either. In other words, the displayed mentality of the tunnel workers and their must-have knowledge skills cannot be quarantined from the realm of the foundational discourses that underpin industrial society's practices of specific knowledge-cultures. Thus, each human testimony (including the labour of the non-human actors, the machines) *performs* and *reproduces* technoscience. What I imply here is that the workers' testimonies sustain technoscience's foundational narrative for which the Alps (nature) are the "raw material" for human action, and a "corollary of mind" (*sensu* Haraway 1997:102). In Bourdieu's and Passeron's (1973) terms, these portraits embody the *cultural capital* required to reaching out for the collectively envisaged future of economic and social benefits that the building of the tunnel forebodes.

Critical Reflexivity and the Public "Testing Ground"

In *Modest_Witness@Second_Millennium.FemaleMan©_Meets_OncoMouse™*, Haraway criticises science studies' reflexivity by referring to Steve Woolgar's "modest being" and his "relentless insistence on reflexivity" which, according to Haraway, "seems not to be able to get beyond self-vision as the cure for self-invisibility" (1997:33). While Haraway criticises science studies and claims that in following the action in science-in-the-making, science studies is just "intensifying, perversely, the structure of heroic action" (34) which for her is a story that is told "by the same story" and an "object of study, and the method of study miming each other" (Ibid.), she notes:

> Critical reflexivity, or strong objectivity, does not dodge the world-making practices of forging knowledges with different chances of life and death built into them. All the critical reflexivity (...), situated knowledges, modest interventions, or strong objectivity "dodge" is the double-faced, self-identical god of transcendent cultures of no culture, on the one hand, and of subjects and objects exempt from the permanent finitude of engaged interpretation, on the other. (37)

Haraway's critical reference to Sharon Traweek's high-energy physicists' *culture of no culture* (1988:162) points to the unrecognised contingencies in scientific knowledge production caused by our complex Western knowledge-cultures of culture-free law, empirical fact and extreme objectivity. These issues are deeply engraved in the realms of the human and non-human apparatus of the production and sustenance of technoscience (1997:102), and they touch as well on the dimensions of cultural and critical reflexive learning. Furthermore, the gigantic and not unrisky technoscientific enterprise of building a 57km Alpine underground passage through highly diverse and unknown rock strata that were formed in a process lasting tens of millions of years solicits the assessment of threats and environmental management in the context of public, economic and political interests. Based on Haraway's criticism and insights, it might be suggested that the exhibition constitutes, in a sense, a public "testing ground" for Haraway's and Traweek's human and non-human frameworks in producing, nourishing and sustaining technoscience.

Reproducing Regimes of Power and the "Art of Governmentality"

To illuminate the role and function of cultural work, which plays a central role in catalysing and linking public interest and discourse around the key civic issue of building a railway tunnel across the Alps, I wish to elaborate on some aspects that link cultural work and knowledge to processes of "governing" and "rule". These processes are of most interest here, for in them lies the idea that individuals are, as Banks argues, "somehow deeply implicated in the reproduction of regimes of power" (2007:46). Drawing on Foucault, Banks notes:

> [W]e are alerted to the relationships between social power and discipline of individuals, and the ways in which the political-economic framework of societies are [sic] not simply dependent upon the formal government of abstract systems, but on the management and control of individual practices and the self. This means that (as Foucault argues), primarily in the interests of capitalism, the micro-processes of social reproduction, right down to the fine detail, of for example individuals' work, health, family and sexual conduct have become the focus of discipline through calculated mechanisms of administrative control. (2007:45)

Conceived as a systematic process of industrialization, globalization and capitalist relations of production, the neoliberal mechanisms of rule, according to Banks, "permeate the social fabric and help define core norms, values, attitudes, and beliefs, particularly regarding how to conduct oneself as a social (and economic) actor" (2007:46-47). Banks, drawing on various authors such as Mitchell

Dean (1999),[80] and Peter Miller and Nikolas Rose (1990),[81] describes the relationship between governmentality and cultural policy as an "'art of government' characterised by a distinctive assemblage of ways of seeing, thinking, and perceiving" that underpins the "distinctly programmatic character of governmentality" (47):

> The formation of policy can thus be viewed as a means for government to create the conditions of its own legitimacy, for, in order to govern, an authority must work to ensure that there are specific and recognizable terrains that require governing, ones that are amenable to the tools and solutions proposed by that authority. (47-48)

Subjected to (governmental) *control* the entire workforce and the cultural workers themselves are as a group or individuals implicated in the reproduction of regimes of power in governmentality perspectives and thus play an active role in the exercice of power, as Banks points out (46). In other words, as social subjects they are "socialised into an acceptance of the virtues of rationally managed systems of work" (45), and while the Gotthard Base Tunnel exhibition as a public space of knowledge denotes the technical and feasible, the innovative and meaningful, its creators appear as "active subjects" to have become what Banks calls the "object and target" (46) of disciplinary discourses.

Different Ontology, Ethic of Non-Control, Acknowledgment of Contingency

My point in invoking the issue of how cultural workers and the tunnel workforce present and orient themselves towards disciplinary discourses to enhance greater instrumental and social power, and how they are simultaneously deeply implicated in the reproduction of governmental, calculated "mechanisms of rule", as Banks argues (94), has to do with the prevalent knowledge practices and idioms of control that the culture of science, innovation and governance encompasses. Emphasising the necessity of a different practical culture of science, innovation and governance, and different forms of learning from the dominant culture of instrumentalism, Felt, Wynne et al. outline the need to embrace an ontology of uncertainty, an "ethic of non-control" and contingency that for them needs deliberate cultivation (2007:70). They note:

> These different forms of learning from the dominant culture of instrumentalism almost as end in itself, are connected through the identical factor of learning about "the independent other" with a different ontology from our own familiar and taken-for-granted one—whether this other be human, or natural, or both. In this sense there is a deeply moral dimension to this learning, which allows consideration not only of means, but also of human ends (...). It would be consistent with public understanding of science research to suggest that if there were such an institutional acknowledgment of contingency, lack of full control, and difference, European

[80] Mitchell Dean is an Australian professor of sociology with research interests in political and historical sociology, critical social, and political theory.
[81] Peter Miller is a British professor of management accounting with research interests in investment appraisal in new manufacturing environments and accounting in the new European public sector. Nikolas Rose is a British sociologist and social theorist who has done extensive work on the history and sociology of psychiatry, on mental health policy and risk, and on the social implications of recent developments in psychopharmacology.

> citizens would eventually be in greater sympathy with the science and policy institutional actors committed to it. For ordinary citizens, uncertainty has always routinely included lack of control, and lack of predictability, of many significant behaviours which impinge on daily social worlds. This is contingency. It requires readiness to blend reflection about conditions of knowing with intelligent adaptation to the unpredicted; and it still allows stabilities and predictabilities, measures and even certainties, albeit always conditional ones. Instead of bracketing them out, or steering around them as if they were not there, learning would embrace these typical states of contingency. (Ibid.:70-71)

While Felt, Wynne et al. emphasise that learning has been understood "mainly as about learning within such premises of improving control, social or technical, and greater instrumental power" (70), their analysis points to a different and more open scope of reflexive learning. Yet, these envisaged possibilities for reflexive learning, the ethic of non-control, and the recognition of contingency are deeply implicated in society's aspirations to determine and define core norms, values, attitudes and beliefs, particularly concerning to what extent individuals' desires, interests, reflexivity, self-development and self-autonomy—which are central to their conduct, as Banks outlines (2007:41-42)—are "permitted" to break away from social prescriptions. Here, Banks points to the progressive liberal-democratic possibilities for individualization in cultural work and posits the possible revival (rather than repression) of active agency in individualization.

Complexity, Contingency and Collective Experimentation

For Felt, Wynne et al. society is an "experimental laboratory without walls" and its citizens are the subjects (guinea-pigs) of "open-ended techno-social-environmental experiments" (2007:68). They write:

> The continuing experimental character of the social diffusion of fully-tested technologies, for instance, has always been the case in the sense that laboratory experimental testing can never fully anticipate and enact the sheer complexity, contingency, variety and combinatory flux of the conditions of use even of a simple hammer or paper-clip, let alone a stem cell or a guided-missile system. However, the possibility of replicating in prior laboratory containment the salient conditions of implemented and enacted technologies like: full nuclear energy fuel cycles; automated computer-controlled aviation technologies; or commercial-scale GM crops, their environmental interactions and their full, segregated food chains; has become utmost challenging. For more complex and networked technologies especially, experimental conditions, open-endedness and unanticipated new interactions and behavioural demands—new test conditions and questions—continue way out into society's farther reaches, well beyond formal societal regulatory testing, approval and release. (Ibid.)

While the *complexity* and *contingency of* scientific knowledge, Felt, Wynne et al. suggest, should be considered for potential use in "public arenas of all sorts, whether innovation and

technologies, or regulatory policies, or combinations" (Ibid.), they point to the importance of recognising, alongside contingency (as distinct from uncertainty), the importance of *collective experimentation* in fields of innovation, science and governance. Taking the significance of collective experimentation in fields of innovation, science, and governance, and the ethical and political rethinking of the routine involvement of citizens as experimental subjects into consideration (2007:71), I ask: *How* should the complexity and contingency of the experimental testing of new technologies, and, moreover, science and technology's unsustainable engagements and declining public respect be addressed in public civic dialogues? *What* public techno-socio-cultural knowledge environments are needed to enroll citizens in processes of collective (self-)reflexivity and learning? As a consequence, I will reflect in my ongoing investigations on the suggested importance of experimental idioms of thought and practice for social and reflexive learning for science and governance from the scope of techno-socio-cultural spaces of knowledge, and I ask what this implies about learning in these spaces. I further ask: How are we to articulate contingency in domains of cultural production, civic dialogues and projects?

Questionable Instrumental Proliferation of Technoscience

Having ventured into issues of technoscientific knowledge and dialogue-making in the Gotthard Base Tunnel exhibition, my central motivation has been to provide a critical and fair discussion of the cultural work practices of "intermediaries" under the mandate of science and governance, as well as representatives and participants from public cultural and civic interests. The construction of the Gotthard Base Tunnel is not only a pertinent example of an immense technoscientific and material enterprise, but also an economic and socio-political venture on Swiss national territory in the heart of Europe that denotes the *meaningful* and *doable.* If we consider the hybrid mix of knowledge and material-semiotic representations in the Gotthard Base Tunnel exhibition from a somewhat more nuanced perspective of how cultural work, knowledge, creative agency, economic interests and capital interrelate in imbedded contexts of trans-national interests,[82] and how these issues are altogether impacted by the present moral crisis, as Armstrong argues (2009, no pagination), then the instrumental and evidence-oriented proliferation of technoscience with its problems becomes highly questionable. Furthermore, and in connection with the civic dimensions of science and our contingent technoscientific knowledges, the issue to which we must not fail to pay attention to is public unease and discontent with science. There exists, Felt, Wynne et al. have outlined, a critical and serious lack of public trust in innovation-oriented as well as protection-oriented science which is of foremost societal and policy concern (2007:65). I therefore suggest that, while scientific knowledge has been faced with declining public legitimacy for quite some time (Ibid.:71), the exhibition's attempt to make meaning of technoscience and society together with primarily young audiences in promoting a type of reflexivity that voices a heroic undertone is problematic. A deeper and more comprehensive analysis

[82] The trans-national interests are rooted in the expected impetus for economic growth and future European rail mobility by which the enterprise of boring the Gotthard Basel Tunnel is driven: the modernisation of the Paris–Dijon–Dole–Lausanne/Neuchâtel–Berne rail line, and the Rhine-Rhone high-speed rail route approved by Switzerland's Federal Council. These measures will shorten the travelling time between Switzerland and Paris by 15 minutes. (Source: Swiss Federal Office of Transport [Ed.] 2007. Through the Alps at 280km/h. *Alptransit. The Future of Rail*, 2, March. p. 2).

of the knowledge-based and fragmented labour which civic projects and dialogues in the age of knowledge work and the globally-functioning knowledge economies perform is thus necessary. And, since globalization displays today a problematic material face instead of following more ethical and reflexive directions, as Claus Emmeche argues (2001:238), the pursuit of the discussion, contemplation and reflection of our civic practices of knowledge production, exchange and cultural work in the built space of industrialization becomes an important endeavour.

Alongside the argument that the technoscientific, economic, socio-political, religious and epistemological claims underlying the material-semiotic representations in the Gotthard Base Tunnel exhibition call for a deeper and more open literacy and focus of attention, I have provided in this case study critical reflections on the cultural performance and instrumental reproduction of technoscience. We literally inhabit and are simultaneously inhabited by the cultural, material-semiotic and heterogeneous dimensions and figurations of the post-industrial world. My reflections on the heterogeneity of diverse societal circumstances and conditions, micro-processes of social reproduction and governmental power and control, capitalist relations, instrumentalism, industrialization, and globalization that appear to impact the intellectual and anthropological strategy of cultural workers to establish a transient techno-socio-cultural space of knowledge are depicted in Figure 2.10.

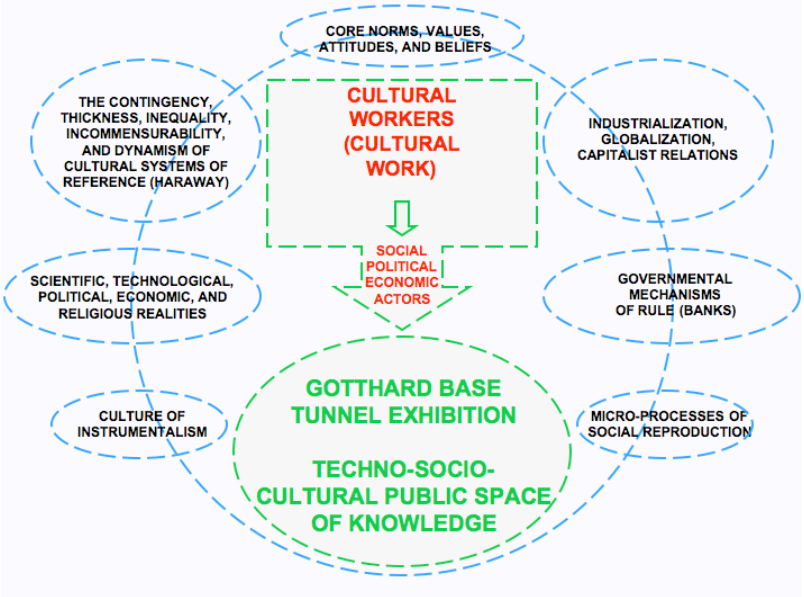


Figure 2.10

Actor-Network Theory (Material Semiotics) in the Gotthard Base Tunnel Exhibition and Cultural Work

At the end of this case study, I want to reflect on how Actor-Network Theory has inspired my empirical research and how it has enabled me to explore "stories" about "how" relations assemble, realities emerge from an exhibition, and "how" a transient cultural space of knowledge is created through practices of cultural work. My aim is to develop a sensibility towards what Law calls the "messy practices of relationality and materiality of the world" (2009a:141).

In the case study of the Gotthard Base Tunnel exhibition, cultural work can be seen as a socio-material engagement which is embedded in and depends on a multiplicity of issues such as societal and community concerns, economic interests, capitalist social relations, neoliberal mechanisms of rule, micro-processes of social reproduction, the programmatic character of governmentality, instrumentalism, globalization, built activities and juxtaposed elements enlisting the public to follow a programme based on the relations of socio-economic-political and epistemological networks and heterogeneous materials (computer terminals with information on the tunnel construction and its techno-scientific frontiers, the control cabin of the tunnel boring machine, the virtual blasting on a video screen, interactive relief maps that promote local tourism, the statues of Saint Barbara and William Tell, and other elements).

By approaching cultural work as a behaviour which is dependent on relations and realities expressed through heterogeneous materials, it is enacted in dynamic interactions between human and non-human actors, artefacts and material-semiotic arrangements. Yet, what do these relations from the perspective of Actor-Network Theory tell us about our practices? From within the framework of my ethnographic observations and translations of the human and non-human assemblage, the meticulous description and contemplation of the different objects in the Gotthard Base Tunnel exhibition has offered a way of understanding these objectified material-semiotic worlds, a way of knowing about our staging of things relating to an understanding of the politics of knowledge, and thus opening a horizon for other ways of relating, creating and imagining (*sensu* Maria Puig de la Bellacasa[83] [2011:99]). It is a confrontation with the way we represent things, the way we convey knowledges about these things, and it has helped to understand how things are held together: how religion, for example, is materially and semiotically represented and what implications there are across the bifurcation of consciousness. And it is also an approach to what Puig de la Bellacasa refers as an ethicality that encompasses socio-technical assemblages (Ibid.:100).

Thus, the Gotthard Base Tunnel exhibition as a civic dialogue system can be seen as an example of how practices constitute assemblages of relations which enact specific realities (Law 2009b). In other words and in order to understand cultural work in the context of this case study, we need to acknowledge its performative agency that becomes materialised and stabilised in specific relations of human and non-human actors by performing and reproducing science and technology as a major ingredient of this venture. From the perspective of Actor-Network Theory, the Gotthard Base Tunnel exhibition can thus be regarded as an emerging property of cultural work and relations: a mixture of heterogeneous materials, artefacts as agentic powers, and symbols that become more stable and durable. My point here is that the hidden agency of human actors (cultural workers) who established what I have explored as a *transient techno-socio-cultural space of knowledge* constitutes an essential ingredient of the (socio-)material-semiotic entity and world-constituting impacts of this setting.

As a consequence, cultural work cannot be detached from the semiotic worlds and socio-technological assemblages of knowledge construction that are constituted by it. One of the main points that the study makes is that cultural work entails the performance and construction of these entities and elements with technoscientific, economic, socio-political, religious and epistemological

[83] Maria Puig de la Bellacasa is a researcher and author with key interests in the development of feminist knowledge and practices, and its questioning of traditional modern Western knowledge.

connotations. This reveals more concretely how cultural workers, who can be conceived as institutional, economic and political actors, are involved in the design of a techno-socio-cultural knowledge space in an attempt to mediate knowledge and socio-political priorities through specific material or semiotic apparatuses. Thus, the actor-network approach contributes (as argued earlier) to a perspective of Foucauldian material-semiotics by borrowing from his conception of knowledge and power.

While the world seems to have become more of a research space for network ethnographies and constructivist theories with "arcane and techno-hyped spaces", as Puig de la Bellacasa argues (2011:85), the Gotthard Base Tunnel exhibition and its primarily technoscientific, contingent and instrumental realities provide an example of such spaces. This leads me to the question as to how the representation of science and technology in the cultural worlds of knowledge production and dissemination, and our staging of things for cultural learning as is the case in the Gotthard Base Tunnel exhibition, could engage us in alternative forms of commitments involving the rethinking of knowledge politics in socio-cultural as well as ethical-political terms. My point is that there is both a necessity to rethink the everyday processes of knowledge construction, and the production of more authentic studies of science and technology by including "politics in accounts" as "ways of studying and representing things can have world-making effects", as Puig de la Bellacasa maintains (Ibid.:86). In other words, scientific knowledge's instrumental powers in technology and its ways of being represented in socio-material and civic-political terms pose a major challenge to critical (self-)reflexivity (Haraway 1997) and (un)learning (Felt and Wynne et al. 2007) through alternative modes of governance of cultural work and civic dialogue-making, and to what we may call the development of a new form of "reality-work" (Law 2009b) and the social, ontological, political and epistemological questions this entails.

In sum, my inquiries into a number of objects and their narrations in the Gotthard Base Tunnel exhibition from the perspective of their deeper and more entangled characteristics have given me insights into the "networked" function, agentic potentials and powers of these material-semiotic entities within a public display. In the context of the exhibition, the selected larger eye-catching objects (such as the model of the technoscientific monster of the tunnel boring machine, or the video-installation with portrayals of the tunnel workers etc.) are conceived as the outcome of messy and contingent practices of materiality and relationality, arrangements of things that could be different in terms of different relationalities, a different reflexivity and ethicality, and different pragmatics that could encourage us to include different stories about science and technology, epistemology and politics. I think this is what the actor-network approach in the case study of the Gotthard Base Tunnel exhibition has contributed in terms of approaching the very "essence" of society and nature as it has sensitised me to the enactment of unquestioned realities and our obsessions with power instead of going further than "assembling existing concerns" (Puig de la Bellacasa 2011:100), and involving humans in what Law refers to as the "politics of the real" (Ibid.:2).

The descriptive analysis of the empirical material has served to interweave my theoretical understanding of the agency of cultural work and knowledge-making in the particular material-semiotic setting of the civic dialogue system of the Gotthard Base Tunnel exhibition. It is important to re-emphasise that Actor-Network Theory has served in this study as a distinct tool for the analysis of the material-semiotic properties of differing *knowledges* and the heterogeneous relations of socio-

economic and epistemological networks in which human and non-human actors are embedded. The problem with the descriptive approaches of Actor-Network Theory is, as Walsham writes, that the studies produce a "veritable mass of detail" and "book-length output" (1997:476). Walsham adds that in this approach Latour is aware of the problems of its limitations in trying to identify all the heterogeneous associations between the human and the non-human actors (Ibid.). Actor-Network Theory emphasises the importance of detail and thus, for presentational motives, the problem of selection, according to Walsham, "tends to be magnified" (Ibid.). Walsham's proposal is that there is a need to experiment with different ways of describing case studies in "paper-length format" (Ibid.).

With my over-paper-length case study of the Gotthard Base Tunnel exhibition and its methodology for reflecting on the "reality" of its objects, practices and their semiotics which do specific realities and convey knowledges, I have tried to contribute to a specific awareness or rather *sensibility* (as stated earlier). For me, this way of approaching the case study has helped to understand how realities and relations are constructed in the heterogeneous field of the cultural production of knowledge in which the agency of cultural work and civic dialogue-making play a crucial role. Instead of subjecting the study to an analysis which could have been based on traditional methodological approaches exploring, for example, the exhibition in terms of its more general purpose, origin of idea, approval process, funding, budget, concept and design development, fabrication, installation, assessment etc., the actor-network approach has offered insights into socio-material practices and processes, meaning and materiality, and the scope of human and non-human agency in ethical-epistemological-political terms. In actor-network webs, Law writes, the distinction between human and non-human is of little initial analytical importance as "people are relational effects that include both the human and the nonhuman" by adding that whether we are "'big' or 'small', the largest part of the webs we draw on and allow us to act are hidden. An actor is always a network of elements that it does not fully recognize or know: simplification or 'black boxing' is a necessary part of agency" (2009a:147).

Different Future and Politics for Cultural Work

As social, political and economic decision-makers cultural workers (as we have seen) make knowledge available for public audiences under contingent conditions and the "rule" of disciplinary discourses. Having analysed the mechanisms of (governmental and social) control that dominate cultural work in establishing a techno-socio-cultural space of knowledge such as the Gotthard Base Tunnel exhibition, I have raised critical questions with regard to future prospects of reflexive learning and collective experimentation. Based on my assumption that there is a *different future* and a *different politics* for cultural work, a central issue is *what* sort of intellectual work and creative agency is needed in order to respond to the prevalent economic and political frameworks, production-oriented contexts, factual constraints, and conditions of social regulation. How should we focus valuable energies in civic dialogue projects, and how are we to practise significant and critical (self-)reflexive thinking in domains of cultural production and science, innovation and governance? Is there an "epistemology" for cultural work and our knowledge that may provide a different scope for "reflexive" thinking about the post-industrial world, industrialization, globalization, and the planet? Are there "alternative" forms of cultural knowledge-making, civic dialogues and social exchange?

The mission of the Gotthard Base Tunnel exhibition is to be a dialogic and civic forum in which the general public and diverse audiences are informed about the technoscientific frontiers and material and technological challenges that the construction of the tunnel entails (Figure 2.11). While I have examined the civic “dialogue” from the perspective of exploring possibilities and potential for change, this is also a necessity to make a case for the exploration of a different critical and reflexive practice for those working within institutions as cultural workers, and those who are their audiences. Much of the “dialogue” provided in the Gotthard Base Tunnel exhibition raises questions about the purpose, the intention and the final aim of humanities- and arts-based civic dialogues. There are different ways of programming a cultural space in creating “dialogic” interpretative displays and responsiveness to civic issues. As civic dialogue-makers, “knowledge workers” and decision-makers, cultural workers play an important and pivotal role. Yet, what educational and societal impact do their decisions have? The key words are *civic* and *dialogue* themselves. According to Gibbons et al. our intellectual values expressed in the humanities and the arts are shaped by the “dialogic” and social contexts in which they are developed and practiced (1994:91). As I will continue to reflect on the prospects of a different cultural work in generating civic dialogues and the cognitive virtues, intellectual and epistemological ambitions underlying them, the more material face of the world of commerce and commodification in the cultural industries that has created a form of public alienation must also be taken into account as a complex and weighty problem. This requires readiness to blend reflection on the creation of conditions of knowing and social learning in “cultural laboratories”, and moreover, to (re)consider and rethink significant social behaviours and acting.

Figure 2.11

In this chapter, I have examined some aspects of the implications of science and governance in relation to the construction of a public techno-socio-cultural space of knowledge and cultural learning in the contexts of post-industrial culture. My cut into the Gotthard Base Tunnel exhibition’s ontological

flesh to circumscribe the relationship between cultural work and epistemological dimensions in creating a continuous narrative of scientific, technological, political, economic and religious knowledge-of-reality has laid the foundations for ongoing inquiries. At stake are the civic cultural knowledge spaces invented, designed and established by social actors, cultural workers or other “intermediaries” that create valuable dialogic and educational contexts for cultural learning.

In the next chapter, I explore a contrasting perspective of civic cultural production and dissemination of knowledge while I reflect on the contemporary social and global “implosion” of the enterprise of science and technology in the context of China’s industrial and economic expansion. My inquiry into Jennifer Baichwal’s film *Manufactured Landscapes* (2006)—a portray of Edward Burtynsky’s photographic work that documents China’s industrial age—reconsiders the issue of reflexive thinking in the cultural workplace and civic dialogue practices, and raises questions about the position of cultural work in the global market culture, and its role in creating a public and cultural space of knowledge concerned with the unsustainable side of industrialization and globalization. In chapter 2.3 I will sketch a propositional taxonomy of post-industrial “cultural knowledge work” by drawing on the findings of the two previous case studies.

2.2 *Manufactured Landscapes*—Manufacturing a Cultural Space of Knowledge (Case Study 2)

> The problem is that transparent, unmediated, undisputable facts have recently become rarer and rarer. To provide complete undisputable proof has become a rather messy, pesky, risky business. And to offer a *public* proof, big enough and certain enough to convince the whole world of the presence of a phenomenon or of a looming danger, seems now almost beyond reach—and always was. The same American administration that was content with a few blurry slides "proving" the presence of non-existing weapons in Iraq is happy to put scare quotes around the proof of much vaster, better validated, more imminent threats, such as global climate change, diminishing oil reserves, increasing inequality.[84] (Latour 2005:9)

Jennifer Baichwal's film *Manufactured Landscapes* (2006)[85] is a portrayal of the photographer Edward Burtynsky and his stunning and doom-laden images of China's industrial revolution. Burtynsky is known as one of Canada's most respected photographers. A predominant theme in Burtynsky's work is the transformation of nature through industry. He writes about his work:

> I set course to intersect with a contemporary view of the great ages of man; from stone, to minerals, oil, transportation, silicon, and so on. To make these ideas visible, I search for subjects that are rich in detail and scale yet open in their meaning. Recycling yards, mine tailings, quarries and refineries are all places that are outside of our normal experience, yet, we partake of their output on a daily basis. These images are meant as metaphors to the dilemma of our modern existence; they search for a dialogue between attraction and repulsion, seduction and fear. We are drawn by desire—a chance at good living, yet, we are consciously or unconsciously aware that the world is suffering for our success. Our dependence on nature to provide the materials for our consumption and our concern for the health of our planet sets us into an uneasy contradiction.[86]

While Baichwal's film and its real-world conjunctions constitute, on the one hand, a moving cultural

[84] Latour refers here to Colin Powell's (the former US Secretary of State) "infamous talk" about the "unambiguous, and undisputable fact" (2005:8) of the presence of weapons of mass destruction in Iraq given at the United Nations Security Council meeting at UN headquarters in New York on 5 February, 2003.
[85] Jennifer Baichwal is a Canadian filmmaker. Her film won top honours including the 2006 *Toronto Film Critics Association Award* for best Canadian feature and best documentary. (Source: Smith [2007]. Made in China. Jennifer Baichwal and Edward Burtynsky on Their Travels Across Manufactured Landscapes. *Bright Lights Film Journal*, 58. no pagination).
[86] See <http://www.edwardburtynsky.com> downloaded 1 August 2009.

response, they provide, on the other hand, a breathtaking narrative of the environmental, ecological and social consequences of China's industrialization. At the core of *Manufactured Landscapes* is the unspoken intent and goal to explore the remnant and newly established zones of China's industrial and economic expansion, and to shed light on the disputable scale of globalization and its multiple workings that are being driven by a combination of economic, technological, socio-cultural and political forces. As a part of my intention to *illuminate* cultural practices of mediation, translation and representation, I consider the challenges and various dimensions of (self-)reflexive thinking that the film conveys. I ask: *What* are the matters-of-concern that Baichwal and Burtynsky as cultural producers express and communicate in seeking to reach and target audiences?[87] What reflexivity and critical thinking in the knowledge they offer of China's industrial process does Baichwal's and Burtynsky's epistemology exhibit? What does the film's *res* of *res publica* tell us about our utilization of science, of technology, of objects, of things, and of nature? And what public (political) "space" of knowledge does *Manufactured Landscapes* constitute?

The Blind Spot and Methodological Considerations

While the case study of the Gotthard Base Tunnel exhibition dealt with cultural learning within the industrial paradigm of scientific and economic knowledge, and revealed a strong commitment to dialogue in order to engage audiences in an instrumental understanding and experience of technologically-based innovations, the case study of *Manufactured Landscapes* is concerned with a global perspective and global challenges. As Goleman points out (2008:32), these challenges are entangled in a fundamental "perceptual dilemma"—a "vast, blind spot" that we all share. I suggest that in its core *Manufactured Landscapes'* concerns are about this shared blind spot and the disconnection between our collective actions and the risks they involve. I hold that while in the present study the realm of practices of mediation and representation and questions of existence are central issues, and while my interest is in *different* cultural practices and a *different* cultural work, the reality of the actual threats cannot be excluded from the discussion of critical community matters that provide an essential stimulus for this thesis. Hence, my analysis of the film's epistemology—its "knowledge claims" about the impacts and consequences of our scientific-technical orientation, globalization etc.—is framed by various insights. Among them is the realization currently shared by the scientific, political and economic communities that our Western model of prosperity that one billion people enjoy today cannot be extended to another 5 billion, as Klaus Wiegandt claims in the foreword to Josef H. Reichholf's work *The Demise of Diversity* (2009:xvi). With such global concerns in mind, a critical awareness of science, rationality, ontology, epistemology, reflexivity, ethics, ecology, and politics with which we point to our self-constructed realities is not only crucial, but also indispensable. It is quite obvious that the ways in which I proceed methodologically, that is, how I connect the material-semiotic dimensions, representations and artefacts to the reality of the present social, cultural, economic and political context, inevitably raises questions regarding our knowledge: What is that knowledge, its function and

[87] My use of the term *matters-of-concern* draws on Latour's distinction between *matters-of-concern* and *matters-of-fact* such as those presented in the political context at the United Nations Security Council about the supposed presence of weapons of mass destruction in Iraq.

sense of reality, and how does knowledge build and configure reality? As McCarthy emphasises (1996:10), knowledges are powerful cultural forces, and in what ways we do and can come to recognise reality through our knowledge and how it positions us as interpretative subjects is entangled with our social, moral and epistemological aspirations and issues that the humanities and the arts have traditionally entailed (Gibbons et al. 1994:7).

My analysis is not based on a *physical* photo-semiotic "field trip" such as the one undertaken in the Gotthard Base Tunnel exhibition. Based on the semiotic account of 29 selected film stills, my aim is to shed light on Baichwal's and Burtynsky's pursuits as *cultural workers* in "manufacturing" a two-dimensional (techno-)socio-cultural "space" of knowledge. What mental trajectory and contingent business do they pursue as cultural producers in providing a civic dialogue mirroring the social, economic, and political reality of China's industrial revolution? Everything I reflect upon is subject to Baichwal's and Burtynsky's distinctions (translations) between issues and non-issues, and actors and non-actors. To follow my initially more descriptive method, I will analyse the film stills as if they belonged to an imaginary exhibition (the chosen order of the images does not correspond to the film's actual narrative). I will study the film stills as semiotic representations and reverberations of techno-logical, economic and cultural change, and as cultural references of a narrative around civic issues concerned with the material and political circumstances and conditions of economic globalization. Relying on Haraway's paraphrase that "nothing comes without its worlds" (1997:37), I reflect on these knowledge-providing images as the result of cultural work whose location is "always partial, always finite, always fraught play of foreground and background, text and context, that constitutes critical inquiry", as Haraway points out (Ibid.).

Figure 2.12 (Film Still 16' 38'')

Figure 2.13 (Film Still 57' 20'')

Figure 2.14 (Film Still 13' 18'')

Figure 2.15 (Film Still 16' 20'')

In the course of my reflections, I will draw on excerpts from an interview that Baichwal and Burtynsky gave in the American *Bright Lights Film Journal.*[88] My role is that of a "curator" by taking the intellectual perspective of a photo-philosopher or "photo-epistemologist" who contemplates the multiple role and function of *Manufactured Landscapes* as a humanities- and arts-based civic dialogue.

To begin, I reflect on different scenes by following Baichwal's camera while I rely on Burtynsky's photographs and comments that he took during visits of the "manufactured landscapes". The landscapes are slag heaps, e-waste dumps, gigantic factories in the provinces of Fujian and Zhejiang. Figures 2.12, 2.13 and 2.15 are black-and-white footage taken by Burtynsky himself during earlier journeys in China and introduced by Baichwal into the film. The scene on Figure 2.12 shows a girl in a rural village where menial labourers scour sky-high piles of metal junk and e-waste for copper filaments and other materials, mostly discarded PCs and circuit boards shipped over from North America (Figure 2.14). The girl standing in front of a pile of metal rubbish gazes at one of Burtynsky's polaroid pictures taken just moments before. Figures 2.13, 2.16 and 2.17 show urban locations in the Three Gorges Dam area, where the Chinese government realised the world's largest hydro-electric project, displacing 1.1 million people from the demolished Yangtze River cities in 2004. Figure 2.18 depicts a worker on the gigantic Three Gorges Dam construction site. In the Figures 2.16 and 2.17, we glimpse Burtynsky's colour pictures of residents dismantling their soon-to-be-flooded cities. A man in Figure 2.13 holds a black-and-white polaroid picture against Burtynsky's camera, taken again just moments before. In the image in the picture the man poses for the photographer, standing on a street in one of the thirteen Chinese cities that were self-destroyed by its citizens.

Figure 2.16 (Film Still 53' 36'')

Figure 2.17 (Film Still 52' 51'')

Figure 2.18 (Film Still 47' 23'')

[88] The journal's main focus is on capitalist society and on images that "reflect, support, or subvert it". (Source: <http://www.brightlightsfilm.com/about.html#they> downloaded 28 February 2009).

Commenting on these scenes, Burtynsky mentions in the film what he calls a "measurable wobble" caused by the rush of water in the earth's rotation when the 600km reservoir of the Three Gorges Dam was filled.[89]

Ethical and Moral Dilemmas

Baichwal's open-ended approach to using this material in the film allows viewers to think about their moral concerns generated by these pictures and their attendant ethical dimensions. Questions concerning the ethics and morality of both the Three Gorges Dam builders and the artists who undertake work with this material emerge. The level of inquiry into these issues raised in the context of the civic intent to create a dialogic public space of knowledge (the film) leads to ethical and moral dilemmas at the heart of *Manufactured Landscapes*. In response to the problem of moralising to people, commenting on the political subtext of the photographs, and favourising the special form of criticism they convey, Burtynsky makes the following reflections in the *Bright Lights Film Journal* interview:

> It does exist there, but it's more a conscious meditative approach to what it is I want to show. One can certainly say that this is a critique of globalism, of American or Taiwanese manufacturers creating these co-ventures in China and exploiting the labor. One can have that dialogue. One can say: well, look, they've got some of the latest equipment, they're lifting these people out of poverty, they need work, their lifestyle here is way better than what they had. I like the fact that different disciplines can come in and approach this object and begin to say it relates to this and also to that. I found something very interesting when I presented my work at Queens University, in Kingston, Ontario. We did a cross-disciplinary thing, where the engineering, geology, geography, arts, environmental science, and business departments all came together around the images and each responded to them. And now we are actually doing them as a forum. (...) Everything has consequence, and this is about consequence. This is about the other side of our built environment and the other side of our consumer culture. There's this other world that is massive and ever-growing, and it has consequences both to the diminishment of natural resources and to the expansion of China and the externalization of a lot of the dirty stuff that it takes to make the stuff we like. But it's going into their rivers, and into their air, their food and water, and so all those things are on the table. But you can just pick your handle and enter. When I was in Aral, there was a big photo festival, and my work won the award for the work that has done the most to increase the dialogue around globalization and global culture, because it allows for a kind of openness for people to begin to debate about the meaning of these things. That's what I felt failed in the past in the traditional environmental movement. It was: environmentalists are here to save nature, to save our resources. We good, you bad. You're a bad corporation, look what you're doing. And ultimately, it was so easy for the corporations to marginalize them by saying: well, they don't

[89] Another example of moving water in unsymmetrical ways is the transformation the system of irrigation has made on the hydrological cycle, which changed the earth's axis. (Source: Davis 2009:113).

know how to run the world, are we going to give it over to them? *We* know how to run the world. And so the conversation stopped.[90]

From the perspective of an interpretative approach to *Manufactured Landscapes* and in exploring the meaning of the public cultural dialogue that the film provides, Burtynsky's reply raises key questions about humanities- and arts-based dialogue concepts, practices and strategies. Regarding the function of civic dialogues in seeking to reach audiences with collective matters-of-concern, my research emphasis is more on the knowledge-based claim (and its educational or "learning" dimension) that a work articulates in creating "civic dialogue" between a cultural producer and a viewer, and less *whether* (or not) and *why* difficult and controversial subject matter may (or may not) trigger some form of debate or stimulate public discussion. I will come back to these issues in my conclusions and discuss them in the context of the problem of dominant aesthetic idiosyncrasies, reflexivity, and collective awareness as I want to move on by taking the reader through "my" exhibition.

Figure 2.19 (Film Still 7' 44'')

Figure 2.20 (Film Still 6' 44'')

Figure 2.21 (Film Still 3' 58'')

Figure 2.22 (Film Still 5' 08'')

The "Theater of Industry"

Manufactured Landscapes' artistic intent is to elucidate and provoke dialogue about the disturbing grand scale of China's industrial revolution; it thus unveils the dimensions of unimagined and never seen social and economic realities. This is Burtynsky's and Baichwal's "theater of industry"[91] in which the masses of lined-up, yellow-uniformed labourers have their pep talk in the morning (Figures 2.19, and 2.20). The Figures 2.21 and 2.22 show the film's opening scene: a nine-minute tracking shot of

[90] Smith 2007, no pagination.
[91] Ibid.

the work floor at China's Cankun Factory the size of almost one entire football field. The sequence in Figure 2.21 is an impressive shot of an aerial long view of the factory floor, where 20 million irons are produced per year.

Figure 2.23 and 2.24 stage a Chinese shipbuilding yard. Burtynsky who muses in the film about the magnitude of globalization and material production, which he sees literally represented by these elephantine ships under construction, points to the "great metaphor" behind these vessels that "connect us through seas". While these soon-to-be-built ships and their future journeys represent for him, in some sense, the rationale of the global all-encompassing economic matrix, all the materials that we experience come for Burtynsky "through [these] ships". They represent for him the kind of reason that has allowed globalization to take its tremendous size and huge proportions.

Figure 2.23 (Film Still 27' 46'')

Figure 2.24 (Film Still 28' 09'')

Figure 2.25 (Film Still 34' 24'')

Figure 2.26 (Film Still 31' 52'')

In contemplating the invisible matrix and supposed connectedness of all the phenomena, things and objects in the world that—on some level—appear to be materially interlinked in a Buckminster Fullerian way, Burtynsky deliberates on the abandoned shipwrecks at Chittagong Beach (Figures 2.25, 2.26, 2.27). The rusty and decommissioned oil tankers are dismantled by hand and scraped for sludge under life-endangering conditions by Bangladesh's poor.[92] In pointing to our dependence on fossil energy and chemicals, Burtynsky muses:

> One time, I was photographing a silver mine. I rode in my car made of iron and filled with gas [gasoline]. I took my metal tripod, grabbed a film that was loaded with silver [silver halides], and started to take pictures. Everything I was doing was connected to the thing I was photo-

[92] The pictures were taken by Burtynsky in Bangladesh on one of the country's ship-breaking beaches.

graphing. Looking at these ships in Bangladesh the connection for me was clear. At some point, I probably filled a tank of gas from the oil that was (...) delivered by one of these tankers.

While Burtynsky's imaginative and organic thinking touches on the world's interconnected and networked dimensions and thus offers a particular philosophical grasp, his reflections contrast with the socially-, environmentally- and economically-unsustainable features of these humanly-created worlds. At this point, *Manufactured Landscapes* offers a glimpse of the true face of Western industrialization and the consequences of what Vandana Shiva has called *environmental apartheid,* in which "through global policy (...) the Western transnational corporations supported by the governments of the economically powerful countries attempt to maintain the North's economic power and the wasteful lifestyles of the rich" (2000:113).

Figure 2.27 (Film Still 33' 51'')

Figure 2.28 (Film Still 28' 05'')

Figure 2.29.(Film Still 42' 03'')

Figure 2.30 (Film Still 42' 45'')

Ambiguous Narrative and Stark Images

As an intermediate summary, *Manufactured Landscapes* is an ambiguous narrative about the awe-inspiring scale of China's industrial revolution and provides dialogue opportunities based on the (subjective) matters-of-concern of cultural actors. Additionally, a heterogeneous amalgamation of social, economic, technical, and political ingredients, Baichwal's film and Burtynsky's images offer an ambivalent awareness of the agency of humans (the workers at Cankun Factory, for example, or the people in Bangladesh who take oil tankers apart), and the life cycle of non-humans (the abandoned ships at Chittagong Beach, for example). With the intention in mind to make the dimensions of China's industrial process visually accessible and turning globalization critique into a *cultural issue*, Baichwal describes some of the difficulties that they were confronted with while filming in China:

Getting back to your question about how hard it was to shoot there: For some reason, (the Chinese) are much more sensitive about motion-picture cameras than still cameras. We wanted to talk to more people, but whenever we tried, we got into trouble. Their supervisors said: "Oh, you're bothering them, they're trying to have their lunch"—meaning: "Don't talk to them". We interviewed this woman at the shipbuilding yard who was a welder [Figure 2.28]. She looked like she was 18 years old and I thought: What are you doing here? Why aren't you in school? (Laughs) She said, "I failed to get into high school so I came here to work; my mother worked here", and it was a fairly benign conversation. But we were not allowed to go back there the next day, because she was not the official spokesperson for this place and was not giving an official story. Her view was meaningless and therefore should not have been solicited. So that dance was constant. And the sequence (at the) coal-distribution (field) [Figures 2.29, 2.30, 2.31]—it's always difficult to be self-referential in film. It's a tricky balance. I kept coming (into the frame) [Baichwal is hidden behind Burtynsky on the left side in Figure 2.29] because I wanted to show the difficulties that Ed [Edward Burtynsky] goes through (negotiating with officials). I wanted to give a sense of that, but at the same time didn't want it to be "Poor us, the film crew that's getting oppressed". We're are in a completely different context and culture, and it's already tricky looking from the outside on that culture. It was hard. Sometimes we snuck around. Our last day, in Shanghai, we told our minder that we were just going shopping. And instead, we went into the burned-out areas where they're trying to relocate people. And there were still some holdouts there, and those are very sensitive areas. Ed himself almost got arrested a few times.[93]

Figure 2.31 (Film Still 43' 33'')

Related to the possibility of a planetary collapse resulting from what Daniel Goleman has called an "unparalleled human binge" (2009:245), the film shows the troubling downside of mass production and environmental degradation intrinsic to the process of material production. These issues are distilled in stark images such as the ready-to-be-shipped containers in one of China's monumental harbours (Figure 2.32), or a vast parking lot (Figure 2.33) of newly manufactured Chinese cars.

[93] Smith 2007, no pagination.

Figure 2.32 (Film Still 25' 02'')

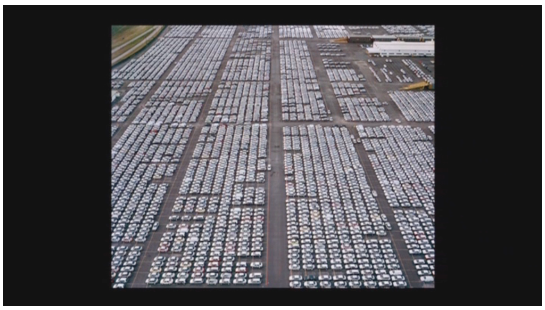


Figure 2.33 (Film Still 37' 00'')

Figure 2.34 (Film Still 36' 05'')

These images of material abundance contrast with those of Bangladesh's poor—the millions of unknown rural workers who appear to pose willingly for Burtynsky's camera inbetween barrels of sludge, which they have gathered under life-threatening conditions at Chittagong Beach (Figure 2.34).

(Self-)Reflexivity and Societal Narratives

In order to shed light on the film's (self-)reflexive properties, I juxtapose *Manufactured Landscapes'* "shockingly gorgeous"[94] account with the wider societal narratives by which we express our shared knowledge and imaginations of the world. In *Taking European Knowledge Society Seriously,* Felt, Wynne et al. analyse the role and function of these narratives that "intersect dynamically with the material, institutional, economic, technical, and cultural forms of society" (2007:73). They write:

> Narratives are routinely reproduced as normal and taken-for-granted, and this tends to mask their historical origins. The masking is not necessarily intended by their authors or enactors. Indeed, widely shared narratives have long-since left behind any possible association with specific authors, interests, or intentions. They are part of the cultural fabric. In consequence, such narratives also shape our futures, often in powerful ways. Societal narratives, like myths, can be in parts both empirically grounded and fictional. They are thus founded in collective imaginations and associated material objects and institutional practices, together constituting what social scientists sometimes refer to as imaginaries. To the extent that narratives are constituents of already designed and lived social imaginaries, they may lie almost beyond

[94] Ibid.

> rational debate or deliberate redesign. (Ibid.)

While the *cultural narrative* of *Manufactured Landscapes* encompasses social, environmental, technological and economic issues and realities, objects, things and cultural forms in open-ended ways, the prevailing societal master narratives—especially those related to science—function in contrast as a stabilizer of the given political reality, yet not as an exclusive and final authority in sustaining the democratic and political order, as Felt, Wynne et al. argue:

> Science still contributes seminally to constructive narratives of (...) past, presents and futures. But science cannot serve as the sole or ultimate authority for a stable or progressive political order. Science’s voice, we have learned to recognise, is one of several social voices that must be heeded in a fragmented, uncertain world. How to accommodate the voices of science with those of democratic pluralist politics is the central challenge we confronted in this report, and the grand narratives which shape our imagination with respect to this issue deserve attention. (74)

The dominant and increasingly influential role societal master narratives play, even though they perhaps lie, as Felt, Wynne et al. argue, beyond the reach of rational debate or intentional redesign, does not solely challenge the rightful policy concerns of science and society in science and governance. As outlined in the case study of the Gotthard Base Tunnel exhibition, this is a complex and weighty issue. In view of the public unease with science and the possibility of institutional failure in experimenting with concrete alternatives to cope with the diverse voices of science, the proper definition of the function and the (re)design of (techno-)socio-cultural knowledge environments in order to enroll citizens in processes of collective (self-)reflexivity needs extra attention. In the following conclusions, I will consider different issues such as the role of the humanities as contributors to the processes of reasoning, and the ethical and moral dimensions of cultural production. I will discuss the problem of creating the collective awareness that civic “dialogue” projects entail, and building knowledge “spaces” such as *Manufactured Landscapes* as a challenge to democratic work. I will discuss these issues in relation to the conduct and role of cultural workers as reflexive, social, political and moral actors. In these conclusions I also reconsider the question of post-industrial cultural work to aim at a different future and a different *politics* within the industrialised process of cultural production.

2.2.1 Conclusions

While the Gotthard Base Tunnel exhibition links public interest and discourse to the civic issue of building the longest railway tunnel on Earth, *Manufactured Landscapes’* civic concerns instead visualise the unvarnished face and massive scale of China’s industrial revolution. The intention of reaching audiences to catalyse and broaden (global) dialogue around present and impending economic and ecological dilemmas that the modern existence of man has created (Burtynsky) lies at the core of this

(techno-)socio-cultural knowledge "space". From the beginning, this aim is connected to the civic concerns that the film expresses and conveys.

As an "artwork" and the remarkable result of the perseverance and self-producing strategies that Jennifer Baichwal and Edward Burtynsky as cultural producers have employed, the film features open-ended contemplations on China's industrialization. A cultural narrative and facilitator of conversation regarding the convoluted issue of China's industrialization process and economic globalization, *Manufactured Landscapes* does not comment on matters of right and wrong in offering knowledge of the repercussions of the industrial age for the (global) environment. China's industrialization serves as a pertinent example to illustrate the state of our homeplanet and the impending global ecological crisis that has pushed life on the planet to the edge. While the crisis is linked to the material hunger of Western consumerism and the pace of China's industrial growth, the film's (self-)reflexive assignment in seeking to reach audiences to offer knowledge of the multiple aspects of the issue is based on the virtues of remoralising impulses. In attempting to re-establish moral legitimacy and social value, Burtynsky, reflecting on our Western material ideals, claims:

> The voyages and resulting images I made during these past five years were as much about my personal need to understand the ecological events unfolding on our planet as they were about the powerful force China is now bringing to bear upon how the world does its business. In my view, China is the most recent participant to be seduced by western ideals—the hollow promise of fulfillment and happiness through material gain. The troubling downside of this is something that I am only too aware of from my experience of life in a developed nation. The mass consumerism these ideals ignite and the resulting degradation of our environment intrinsic to the process of making things should be of deep concern to all. I no longer see my world as delineated by countries, with borders, or language, but as 6.5 billion humans living off a precariously balanced, finite planet.[95]

Burtynsky's (and Baichwal's) visions of a different remoralised future, and the social and moral dimensions of our being-in-the-world addressed by them are seductive given the broad neglect of utopian thinking in the mainstream of critical social science, as Banks—drawing on David Harvey[96]—suggests. Yet, what perspective (and hope) is there for art and culture in the making and remaking of social realities if—from a post-apocalyptic point of view—they could become in our most venturous imaginations "rekindled (...) disinterested practices of 'amusement and self-betterment'", as Banks, quoting Harvey, asserts (Banks 2007:170; Harvey 2000:273)? And *can we do better*, as Latour asks (2005:9), in view of Colin Powell's failure in the sphere of politics that has debunked its true and demoralising face? Does the cultural production of knowledge have any social and political significance and relevance in view of its hitherto neglected ethical and moral dimensions, as Banks argues (Ibid.:102)?

[95] *Press Release September 2005,* The Studio of Edward Burtynsky.
(Source: <http://www.edwardburtynsky.com/Sections/News/Burtynsky_info_Sept_2005.pdf> downloaded 25 March 2009).
[96] David Harvey is a British anthropologist, social theorist and author whose work has contributed to the development of modern geography, but also to social and political debate, and the critique of global capitalism.

Figure 2.35 (Film Still 71' 15'')

Figure 2.36 (Film Still 70' 41'')

Figure 2.37 (Film Still 69' 55'')

Figure 2.38 (Film Still 10' 35'')

What I am suggesting here is that the weight and deeper implications of the knowledge that *Manufactured Landscapes* offers need to be assessed in the context of the "politics of the present", and in light of the instrumental pressures to which the practices of cultural production and social learning are exposed. And what I am saying comes down to this: There is a necessity to (re)consider and reassess the agency and the potentials of "cultural work" in creating a "dialogic" and *political* knowledge space. Regarding both the cultural evidence and the moral-ecological concerns of *Manufactured Landscapes*, the issue at stake is Baichwal's and Burtynsky's art-based "knowledge claims" that rely on the humanities' more lateral site (Figures 2.35, 2.36, 2.37, and 2.38 showing visitors in front of photographs at one of Burtynsky's exhibition openings).

Capitalist-Oriented Power-Knowledge Relations, Reflexivity

While institutions in science and technology provide ample space for the production and distribution of knowledge claims, the humanities depend on marginal spaces. Moreover, the humanities appear to be discounted as relevant contributors to the processes of reasoning regarding the proof of issues such as the more imminent threats of a global environmental collapse, or diminishing oil reserves etc., which *Manufactured Landscapes* in its core denominates. Regarding *Manufactured Landscapes'* self-assignment to target audiences with collective matters-of-concern, a challenging and contrasting issue is the predominance of political reasoning and instrumental imperatives. They appear to discredit the non-instrumental values that cultural workers pursue—as Banks, by drawing on Bell (1976), argues—and thus "decontextualise, commodify and (...) (arguably) divest oppositional art of its critical power" (2007:157). Moreover, and according to Banks who draws here on Bourdieu (1993), cultural actors are "primarily (if not entirely) driven by instrumental, status-seeking (and economically acquisitive)" artistic

endeavours (2007:161) and perhaps also by an ostensibly "moral" awards system.[97] Quoting from Adorno that cultural workers in reflexive modernity continue "to fasten on the culture-masks proffered to them and practise themselves the magic that is already worked upon them" (Adorno 1991:82; quoted in Banks 2007:160), he argues:

> To my mind, the question of whether cultural work contains progressive or transformative potential (for both workers and society at large) remains open. A definitive understanding is perhaps obtainable, but can only emerge through further detailed investigations into the structures of cultural production—including more thorough assessment than hitherto of the motivations, practices and actions of cultural workers themselves. (2007:184)

Whether and under which conditions cultural work can develop and foster transformative qualities remains an ongoing question for this study. Clearly, a great deal is at stake in coming to an understanding of which new avenues of possibility for cultural work might work and what cultural, economic, political and institutional factors and conditions can be considered relevant and decisive in that respect. In emphasising that current cultural work appears to be rather precariously positioned, Banks and Opie (Ibid.:163; Opie 2001), point to the existing capitalist-oriented power-knowledge relations of the humanities and the arts in a globalised market culture. The current social conditions of cultural work, Banks notes, are "under-rewarded", "brow-beaten" and "drained of political will", as he outlines the consequences of a form of "absolute power" that the capitalist "culture industry" has unleashed (2007:184). The situation is, however, more complicated if we consider the ambivalent features that *reflexivity* and "reflexive" thinking in the context of the humanities display, which—compared to science and technology—are crucial key characteristics of "Mode 2" knowledge production. Gibbons et al. remark:

> Reflexivity (...) has always been a traditional characteristic of the humanities in the sense that their intellectual energy comes from the ceaseless interrogation of the past by the present. History is constructed entirely on this premise, that without the past there can be no present except a featureless instantaneity. But literature, philosophy, and most other humanities disciplines are as completely, if less literally, implicated in the same project. However, reflexivity gives rise to even more complicated and ambiguous effects in the humanities than science and technology. (1994:102)

While Gibbons et al.'s emphasis is on the more ambivalent reflexive features that the humanities exhibit in contrast to science and technology, they confirm the humanities' more lateral standing in reaching audiences with dominant images, which they communicate by means of mass higher education:

[97] In autumn 2005, Edward Burtynsky was one of ten inaugural recipients of the *Annual Flying Elephant Award* of 50,000 US dollars. This award was created by Canadian Artist Gregory Colbert in support of "individuals who make a difference in the evolution of social attitudes concerning global and ecological sustainability". (Source: *Press Release September 2005,* The Studio of Edward Burtynsky).
See <http://www.edwardburtynsky.com/Sections/News/Burtynsky_info_Sept_2005.pdf> downloaded 25 March 2009.

> In some senses, the humanities stand a little aside, as quizzical commentators who offer doom-laden prophecies or playful critiques, and as performers who provide pastiche entertainment or heritage culture as a diversion from threatening complexity and volatility. In other senses they are even more deeply implicated: through the culture industry they fashion powerful, even hegemonic images, and through mass higher education they play a direct part in the new social stratification. (Ibid.:110)

Processes of Collective Thought

As stated in the Introduction and based on Welzer's (2008) deliberations on the emerging picture of global environmental decline, a central motivation of this work is to contribute to discussions of how to develop sustainable foundations for culture and society in emphasising the necessity of increasing sensitivity for collective concerns, and in providing an awareness of the consequences of what we do and how we act. While Welzer suggests that the *cultural treatment* of the question of our future social and collective life might encompass "identity-supporting" dimensions to ecologically sensitise the most harmful actors (2008:268-69), I ask: What are the issues to which we must pay attention from the perspective of cultural and institutional knowledge-practices in order to turn the question of how we want to live together in the future into a *cultural issue*?

While *Manufactured Landscapes'* matters-of-concern and contributions to our awareness and consciousness provide a moral and ethical anchor for pondering our individual and collective behaviour in a more global context, the larger issue at stake concerns our socially-shared values and discourses, and the deeper implications of collective thought. David Bohm's analysis in *On Dialogue* (1996) considers this question. The critical issue are our largely unquestioned "dialogic" capabilities and forms of communication. They are intimately connected to the impositions of the media (for example, video and film technology in the case of *Manufactured Landscapes*), and mirror, in a sense, our difficulties in thinking, in thought. To me, proposing this juxtaposition helps understand what Bohm means by the word *fragmentation*: "thought which divides everything up" (10). In emphasising the possibility to transform consciousness, which for Bohm is essentially an issue of cultural and social solutions depending on dialogue (54), "almost everything around us", he notes, "has been determined by thought—all the buildings, factories, farms, roads, schools, nations, science, technology, religion—whatever you care to mention" (11). Yet, he adds, "we haven't really paid much attention to thought as a process. We have *engaged* in thoughts, but we have only paid attention to the content, not to the process" (10). Based on Bohm's insights I reiterate that our unsustainable consumption of the Earth's resources (which is the result of our actual conduct, our thinking, thought) and the emerging picture of global decline that *Manufactured Landscapes* unveils need to be included in reflections in order to envisage fundamental changes to our public (techno-)socio-cultural knowledge environments. As much as we will have to pay attention to the issue of public unease with science in developing practice-oriented institutional solutions and renewed policy cultures, as Felt, Wynne et al. suggest (2007:65), we will have to reconsider the ways in which we enroll citizens in processes of collective thought.

Civic Dialogue, Late Realization

As a consequence, a central issue of *Manufactured Landscapes* that I wish to discuss in exploring the sustainability of the fragmented public face of the humanities for our awareness of societal, economic and political issues—shared matters-of-concern and discourses—is the larger question of the film's contributions to issues of collective awareness and consciousness. Quite obviously, this is what has been lacking in my analyses and in my response in this case study. Having emphasised thus far and in the previous case study the importance of (self-)reflexivity, unlearning—thought and practice for social learning—and having further pointed to the importance of the public (techno-)socio-cultural knowledge environments for enrolling citizens in processes of collective thought, I wish to reconsider the larger question of how humanities- and arts-based projects function as "civic dialogues" between cultural producers and the public.

As outlined in the case study of the Gotthard Base Tunnel exhibition, the key words are "civic" and "dialogue" themselves. If the vocation of the humanities has "*deep implications* [my italics] for the economy, politics and society as a whole", as Armstrong suggests, and is to "get those central areas of life to go as well as possible for as many people as possible" (2009, no pagination), my question is: What (collective) awareness does *Manufactured Landscapes* offer in that respect? As a manner of societal and communicative commitment the humanities embrace knowledge with a central concern for human beings and our self-conscious awareness of how we know what we know, and how we act. Yet, while *Manufactured Landscapes* as an aggregate of human intellectual activity and cultural work ignites critical viewpoints, its "dialogic" commitment appears to be at odds with the representation and, moreover, the *late realization* of compelling social, economic and ecological evidence that the present crisis invokes. In grasping the socio-economic-technological post-industrial reality and the *other side* of globalization, the underlying question here is whether the "dialogue" that *Manufactured Landscapes* constitutes—reflexive, moral and ethical guidance for culturally sensitive developments, which is what the humanities essentially can offer, as Gibbons et al. purport (1994:8)—has any impact on the re-creation of social values and the signification embodied in the cultural production of knowledge.

Cultural Ecology, Democratic Work

While our unquestioned "dialogic" pursuits of social practices and intellectual values are—according to Gibbons et al. (Ibid.:93)—bound up in humanities, which are commonly regarded as pre-industrial, even anti-industrial, it should be remarked that modernity—and our way of organising and classifying it—never corresponded to what was really going on in thought and practice, and never recognised the *consequences* of these practices, as Scott Lash argues (1999, no pagination). I have always respected the humanities and the arts for questioning the views and ways we think about the world, and for structuring and sustaining ontological demands and cultural behaviours. However, I believe that if we strive to rethink the present *cultural ecology* (Postman 1990) of the humanities and their vocation with serious implications for the existing political, social, economic, ecological and global realities, both the assumptions (the "matters-of-fact") in Colin Powell's "infamous talk" (Latour 2005:8) in the sphere of politics, and the more lateral matters-of-concern of cultural "dialogues" such as *Manufactured Land-*

scapes are at stake. It is also my sense that a great deal is at stake in the age of "knowledge work" and the globally-functioning knowledge economies with regard to our democratic forms of work. A key issue in this respect is—according to Welzer—the capability of democratic work to transpose human interests and aspirations of how we want to live together in the future from a more global perspective.

Predominant Aesthetic Idiosyncrasies, Master Narratives

In this study I have sought to expose some of the ambiguities of cultural work. In the previous study of the Gotthard Base Tunnel exhibition I have problematised the dominating instrumental and science-oriented learning practices with the aim in mind of venturing into the prospects of a different future for cultural work and knowledge. This study made clear that our dependence on scientific knowledge's claims and instrumental power in technology, our institutional treatment of so-called scientific issues, and the emphasis given to instrumental learning and knowledge (Felt, Wynne et al. 2007:63, 64) must be rethought on a fundamental level. In contrast—conceptually and practically—*Manufactured Landscapes'* open-endedness and (self-)reflexivity seem to stay intellectually aloof from the creation of values and signification embodied in cultural production. Moreover, I submit that—ironically—predominant aesthetic idiosyncrasies of which *Manufactured Landscapes* is an example may, in a sense,

Figure 2.39 (Film Still 20' 19'')

Figure 2.40 (Film Still 12' 40'')

subvert consciousness and prevent us from seeing the deeper implications of the world-sized consequences of our problems, and thus pose a fundamental challenge to the more reflexive dimensions of collective life and awareness. More importantly in the present context, we have to deal with the fact that dominant master narratives such as the present innovation-race of "no time to lose", which permeates society as a whole, as Felt, Wynne et al. argue, have disconnected us from the larger historical context and our experiences, as they impact our relations to the world on which we develop our views, purposeful processes of *work*, alternative actions and experiments. According to Felt, Wynne et al.:

> In particular, the urgent societal narrative of "no time to lose" and its associated notions of a global race to lead in technoscientific innovation detach the search for progress from any live sense of a larger historical trajectory which gives us perspective. This also inhibits our institutional capacity or willingness to experiment with possible alternatives. We therefore risk

> subordinating ourselves as citizens to the imagined force of that grand narrative. This dis-empowering effect seems to grow relentlessly, and so does public awareness of it. (79)

Clearly, a key issue is to what extent the master narratives, the dominant policy practices in science and governance, and our pursuits of control and greater instrumental power that make them "durable" disconnect our knowledge and imaginations not only from history, but also from the dangers and problems of our present time, and thus "obscure" our very basic and essential human needs, as Felt, Wynne et al. argue (Ibid.).

Actor-Network Theory (Material Semiotics) in Manufactured Landscapes and Cultural Work

At the end of this case study, I want to reflect again on how Actor-Network Theory has inspired my empirical research and "how" *Manufactured Landscapes* and the cultural space it has created are related to practices of knowledge generation, cultural work and cultural learning. A central question of my final discussion of *Manufactured Landscapes* is its material-semiotic and moral-political commitment to conveying *matters-of-concern* that Baichwal and Burtynsky as cultural producers express in seeking to reach audiences.

While in this case study my reflections constitute a synthesis of detailed descriptions and analysis of both the representation of things and concerns including the cultural workers' ways of thinking about them, I have explored these issues as an assemblage of social, cultural and political interests interwoven into my theoretical understanding of cultural work and knowledge-making. In an attempt to explore practices and their specifities which enact realities and the provision of knowledge, the empirical material has served to reflect on the relational entity created by the interaction of the heterogeneous parts of human actors (the cultural workers) and a non-human actor (the film) which are entangled in this case study in a process of translation and stabilization in its own right.

In the context of *Manufactured Landscapes,* cultural work comprises the socio-material-semiotic engagement of cultural actors that tell stories and express matters-of-concern through constructivist accounts. I have proposed to conceptualise these accounts as a (techno-)socio-cultural "space" that conveys knowledge as a form of representation of issues raised in social and ethical-political terms: concerns about the environmental, ecological and global consequences of China's industrialization. In thus exploring Baichwal's and Burtynsky's "knowledge-claims" from the theoretical perspective of Actor-Network Theory, within this framework cultural work is situated in socio-material-semiotic practices that involve knowledge and raise questions about the reflexivity of matters of collective concern, the ethicality of cultural work in attempting to re-establish moral legitimacy and social value, the impact of political reasoning and instrumental imperatives, and the possibilities of alternative forms of awareness and signification that could be embodied in cultural production.

My general intention has been to make *Manufactured Landscapes*' intrinsic engagement more transparent. I have thus sought to explore it as both an assemblage of human and non-human actors engaged in "reality-work" (Law 2009b), and as a socio-cultural and material-semiotic gesture whose moral and ecological-political concerns I have investigated through film stills, interview excerpts and other materials. I maintain that from a theoretical point of view, the number of objects that the study

has investigated is of secondary significance. As argued earlier, what is relevant is the potential of the narrations to aid in developing theoretical insights into the field being studied, that is: the understanding of how cultural work and knowledge-making "work" within different (socio-)material-semiotic settings. It can be said that my analysis of the empirical material has served to interweave my theoretical apprehension of the agency of cultural work and knowledge-making in the particular socio-material-semiotic setting of *Manufactured Landscapes*. As a consequence, my explorations have contributed to an understanding of "how" a two-dimensional "space" of knowledge is constructed and performed for civic reflection and cultural learning, and "how" practices are connected to the representation and creation of realities which exhibit entangled concerns in the context of a troubled world.

By claiming that the notion of matters-of-concern is relatively new, but "the concerns that support it are not", Puig de la Bellacasa problematises both knowledge politics and the ways we present things, and she points to the notion's "subtle, yet meaningful displacement" (2011:87). "By contrast with 'interest'—a previously prevalent notion in the staging of forces, desires and the politics sustaining the 'fabrication' and 'stabilization' of matters of fact—", she argues, "'concern' alters the affective charge of the thinking and presentation of things with connotations of trouble, worry and care" (Ibid.). My point is that Baichwal's and Burtynsky's presenting matters-of-concern this way (for example the demolished Yangtze River cities, the dehumanising scenarios at Cankun Factory, the exploitation of humans on Chittagong Beach, and the awe-inspiring dimensions of China's industrial revolution) does not allow for "ready-made" explanations upon my cartography of the actors and the realities conveyed, but raises questions of how to practise what Puig de la Bellacasa describes as a respectful ethos of knowledge production (Ibid.).

A problem with the approaches of Actor-Network Theory that I finally want to address in the context of this case study is the criticism of the theory's social constructivism concerning its stance on moral and political issues in particular. The charge of amorality, as Walsham (1997) outlines by drawing on various authors, is centred around arguments that social constructivist approaches are indifferent to the possibility of judgment, that ANT's success lies in articulating contingency rather than necessity regarding technological change, and that its approach ignores political biases concerning the possibilities of choices that social actors have (473-74). It is important to note that approaching *Manufactured Landscapes* from the perspective of Actor-Network Theory has helped to develop a critical view of practices of cultural production and the societal conditions under which they take place. The ANT perspective has also helped to understand the semiotics of cultural production and "how" specific realities are done and knowledges are produced. With my analysis of *Manufactured Landscapes* as a (socio-)material-semiotic gesture and the outcome of cultural work, I have conceived it as an entangled entity of human and non-human actors that seek to express moral and ecological-political matters-of-concern. The actor-network approach has supported me in practising critical thinking with the intention to pursue what Puig de la Bellacasa describes as the "purpose of showing how things are assembled", which does not mean, she notes, "dismantl[ing] things, nor undermin[ing] the reality of matters of fact with critical suspicion about the powerful (human) interests they might reflect and convey" (2011:89).

In sum, from the perspective of Actor-Network Theory and its non-foundational world, the description of *Manufactured Landscapes* as an assemblage of the material-semiotic engagement of

cultural actors and moral-ecological-political interests has supported me in attempts to reflect critically on the significance of materiality, and the enacted realities and knowledges involved. The scope of my reflections has encompassed cultural work practice and "how" cultural work is linked to both knowledge-making and the "hows" of relational materiality, (self-)reflexivity, ethicality, perception, meaning and the aesthetic idiosyncrasies of cultural production. While the material practices that generate the social are disregarded (Law 2009a:148), Actor-Network Theory's material semiotics has helped to explore their *hows.* Their investigation, I believe, has contributed to a better understanding of *how* the social is done and *how* we enroll citizens in processes of collective thought. The actor-network approach has provided knowledge for reflection and raises a number of questions that, in some sense, transcend ANT's criticism formulated earlier in this section. These questions include the possibilities and the necessity of cultural change and related options, the quest for a different knowledge politics and ethos of knowledge representation in contexts of civic dialogue-making, and the creation of a moral-political "space" of knowledge capable of expressing matters-of-concern from within a global and more anticipating awareness. While, as I have outlined in the Introduction, a conceptual challenge of my work is to view cultural work and knowledge from an (ideally) non-dualist perspective that treats the domains of ontology and epistemology equally, the theoretical difficulty to conceive and describe the *human* and *non-human* from within ANT's principle of generalised symmetry poses an intractable probem. This problem of the symmetrical enactment of human and non-human entities will be addressed in the conclusions of the case study of *Fairytale*.

The more discounted potentials of the humanities as an action field for pressing human affairs and impending threats raise questions about our democratic forms of knowledge creation and dissemination. In the next chapter I will sketch a preliminary taxonomy of "cultural knowledge work". Based on insights and conclusions from the two case studies, my aim is to lay out the importance for what I call an "epistemology" of post-industrial cultural work. In envisioning a reassessment of the humanities as "custodians of a discourse about private and public virtue", as Armstrong suggests (2009, no pagination), a pressing concern must be what prospects there are for alternative rationales to generate civic exchange about relevant social, economic and ecological issues of the present crisis. What conceptual and practical changes are needed to reorient the humanities- and arts-based civic dialogues towards providing a deeper, more imminent and stronger anticipating awareness of our collective life and ideas? These are the intriguing issues that I address in the following chapters. I am well aware that the questions are complex and answers need to be found from within a long-term perspective. They face, as Wiegandt foresees, the challenge of fundamentally questioning our lifestyle, consumption and patterns of behaviour and production (2009:ix, xii). In my view, thinking about these issues from the perspective of our "civic dialogues" and cultural work, and its *creative* and inherently *transformative* potentials (and limitations), means thinking about a social, collaborative and *political* dimension in emphasising a more dynamic and *dialogic* conception of the individual whose context is the collective.

2.3 Preliminary Taxonomy of Post-Industrial "Cultural Knowledge Work"

The purpose of this thesis is to investigate possibilities for a renaissance of the current cultural practices of knowledge and cultural work, to ponder the conditions under which knowledge is produced and distributed, and to (re)consider the kinds of knowledge that we as individuals and members of society require. Having outlined in the Introduction the various activities in which cultural workers are engaged as "symbol creators" (Banks 2007:189), cultural producers, or "intermediaries", I wish to re-emphasise by drawing on Banks that I consider *cultural work* a "socially situated and purposeful process of *work*" (Ibid.). From the perspective of a critical awareness of human activity on the planet, the two case studies have provoked questions about our practices of knowledge creation and dissemination in cultural production, and our pursuits of particular knowledge-trajectories in establishing (techno-)socio-cultural knowledge spaces. The intellectual function of these spaces in which we stage and use semiotics and rhetoric—representations of our "knowledge of things"—has been to mirror our cultural behaviours and diverse forms of human activity and concerns.

With my proposition to provide a rationale for a cultural workplace capable of coping with our unsustainable relationships to the sociosphere, I venture—conceptually and practically—into what Bourdieu (1993) has called the cultural field's "space of possibles" in order to sketch out a vision of a *different* (techno-)social-cultural space for knowledge. Whether and to what extent the objectives underlying this vision and the vision itself offer as utopian formula the prospect of new kinds of emerging cultural work is subject to ongoing reflections. In seeking to provide a rationale for an "epistemology" of cultural work, I include different theoretical approaches central to the emerging debate of the future of cultural work. Among them are Banks' (2007) discussion of the prospects of post-capitalist cultural work, Liu's (2004) analysis of the possibilities and occupation of *knowledge work* in the humanities and culture, and Turnbull's (2000) postulation of a "third" space for knowledge (for comments on Liu's and Turnbull's analyses see chapter 5 *Conclusions and Outlook*). It is with regard to these theoretical perspectives that I reconsider in this section alongside etymological considerations the more fundamental conditions under which the globally-emerging new network "knowledge society" has come to impact any human activity—whether economic, cultural, scientific or educational.

The New Network Global Knowledge Society and the Culture Industry

Various authors (Banks 2007; Gibbons et al. 1994; Horkheimer and Adorno 1947) have pointed out and argued—from the perspective of their varying cultural and societal analyses—that the production and social distribution of knowledge has become intensified and accelerated due to an all-pervading marketization and commodification of culture. This has turned *knowledge* into a form of global "capital" and affected the social practices of the humanities and the institutional ecology of culture, as Gibbons et al. (1994) argue. The consequences of these developments are also implicated in the destructive side of the processes of globalization. Additionally and in emphasising the link between human activity and ecological and evolutionary processes (Capra 2002; Emmeche 2001; Nöth 2001, 1998), human values and concerns surrounding the cultural production of knowledge are driven by the imperatives of

the global market and consumer culture that is built into the ubiquitous networks of economic globalization. In *The Hidden Connections* (2002:135-57), Capra, drawing on Manuel Castells, argues that our lives are in fact significantly governed by the new network global society and its financially- and profit-oriented informational flows.[98] According to Robert Kuttner, not the democratic electorate, but the global money market has become "the arbiter of what policies are 'sound'" (2000:155). Furthermore, and in recognising the precarious nature of these issues, the essence of economic productivity, competitiveness and knowledge generation is reinforced by the new information economy and its global markets, and underpins a market logic with speculative tendencies that aim to increase consumerism. Altogether, this makes new public infrastructure necessary, intensifies consumer mobility demands, and entails a highly unsustainable and avaricious run for material and other resources on the global scale. In describing this hegemonic and corporate world-view of free and profit-oriented global commerce, Kuttner notes:

> There is one true path to the efficient allocation of goods and services. It includes, above all, the dismantling of barriers to free commerce and free flows of financial capital. To the extent that there is a remnant regulatory role, it is to protect property, both tangible and intellectual; to assure open, non-discriminatory access; to allow any investor to purchase or sell any asset or repatriate any profit anywhere in the world; to remove and prevent subsidies and other distortions of the *laissez-faire* pricing system; to dismantle what remains of government-industry alliances. (149-50)

In sum, the global network society not only provides a potent skeleton for the repatriation of profit on a global scale, but it also supports and controls the production and dissemination of information and knowledge (Gibbons et al. 1994; Willke 1998; Maasen 1999; Bender 2001) in the now global post-industrial "knowledge society" sketched out by Bell a few decades ago (1973; 1987). The central issue at stake here is a general and observable tendency of the commodification and marketization of culture. In an essay published after his death Adorno reiterates that the "entire practice of the culture industry transfers the profit motive naked onto cultural forms" (1981; 1991:99) thus anticipating today's overall observable tendency to commercially control all sorts of social practices. Moreover, according to Marius Babias (2007), the commodity-like character of culture and the radicalization of this development during recent decades have made politics—due to a problematic aesthetization—appear as culture. Supported by a range of critical theorists including Bourdieu and Harvey, Banks emphasises the link between capitalist networks and the cultural industries in creating *cultural products*, which Gibbons et al. have conceived as the "symbolic currency in the market of life-chances" (1994:91). In other words, the market of life-chances and its multiple currencies, which Gibbons et al. contrast with the hard currency in the markets of industry (Ibid.), is ruled by a (global) *industrialised* culture industry whose "nefarious" product (Banks 2007:5) is what "Frankfurt School" critical theory defines as the outcome of an alienating and "desocialised" endeavour (Ibid.). According to Banks:

[98] Capra refers here to Castells and adds that, on the existential human level, the most worrying sign of the new global economy and its markets may be that it is "a network of machines programmed according to a single value" (2002:141), namely money- and profit-making. According to Castells this is what we can call in other words an *Automaton*, which "decisively conditions our lives" at the core of our economies (2000:56).

> Yet, even now, ongoing transformations in the structure of capitalism appear to provide cultural industries with the opportunity to obtain even greater shares of wealth, power, and control (...) [T]he social and economic impacts of globalization now appear to have exacerbated the scale and scope of the cultural "standardization, commercialization, and rigidification" that Adorno (...) first identified in the high-modern period. (2007:25)

To summarise, the cultural dimensions of cultural work remain, as Banks argues, "distinct (if continually hard to define)" and they cannot be understood in isolation from the social context that "significantly (if not absolutely) defines it" (2007:185). Thus, my aim to lay out the importance (and the practicability) of a different form of collective sensitivity and reflexivity for cultural work, which is at the core of social life and human dialogic exchange, is challenged by the notion that cultural workers are "merely the servile and aliented victims of global capital, or alternatively, self-governing agents of 'network sociality'", as Banks outlines (Ibid.). Yet, while the creation of social, political and cultural values lies at the core of human social life and social relations, a key question is whether there exist more open, reflexive, but, most importantly, less marginal possibilities for the present social and educational cultural work practices in the global cultural economy.

Cultural Work, Knowledge Work and "Cultural Knowledge Work"

While cultural work as a corollary of mind and the cultural production of knowledge occupy a more lateral and ambivalent space ruled by the motors of global economic life, many observers emphasise the "totalising" hegemony of economic thought and capitalist social relations (Banks 2007:157). The key issue here is, as outlined earlier, whether cultural work in the age of information, corporate knowledge work, and the ruling rationalities of market culture will be able to obtain a foothold in a knowledge space different from the one it finds itself embedded in in the present activities of the capitalist cultural industries.[99]

While knowledge work remains a slippery concept, as outlined in the Introduction, there is little consensus as to its definition due to the term's vagueness regarding the nature and processes of work itself and management in general, which different authors have criticised (Collins 1998; Despres and Hiltrop 1995; Drucker 1991; Liu 2004). Despite the ambiguity surrounding knowledge work, my intention in this thesis is to examine prospects and collaborative potentials for cultural work and knowledge work. Therefore, and in order to more thoroughly question the present status of "cultural work" and to explore possibilities for more knowledge-oriented cultural work practices and alternative knowledge spaces, I have generated the term "cultural knowledge work" to emphasise the link between cultural work and the *creation* of knowledge. In relying further on Banks' definition of cultural work as an "act of labour within the industrialised process of cultural production" (2007:3), I relocate Banks' theoretical

[99] The economy of cultural production with multimillion dollar films can be reasonably compared with big science projects, Gibbons et al. argue (1994:96). These and art fairs whose sales total one billion euros making their ethos blatantly commercial, depend on privately funded consumption and individual entrepreneurial choices exercised through mass markets. The global museum construction boom with 1,200 new museums in China alone, the global art market, its fairs and its auctions, as well as a growing conflict-ridden relationship between a new generation of private collectors and public museums, are modern manifestations of a problematic change in the institutional ecology of culture and art. (Sources: Pollack 2008; Ellis 2008, both no pagination).

understanding of the *politics* of this work—how it is "constructed, managed and performed" (Ibid.)—in a discussion of the role and significance of *knowledge*, but also "knowledge work" as an integral part of the establishment of humanities- and arts-based civic dialogues.

Etymological Considerations

Having expanded the concept of cultural work to the broader propositional category of "cultural knowledge work" (Figures 2.1 on page 35, and 2.41 below) as a point of departure, some etymological explanations are helpful since the term "cultural knowledge" itself is entangled with diverse meanings and interpretations. Choo et al., for example, have suggested *cultural knowledge* should be recognised as an analytical category as they link the term to the domains of shared beliefs, norms, values, and cognitive and affective structures that are "habitually used (...) to perceive, explain, evaluate, and construct reality" (2000:43). In *Cultural Knowledge and Conceptions of the Knowledge Society* (2001), Opie sees the potential of *cultural knowledge* in a "conception which is able to integrate the subjective or tacit, the social interactive, values, and local geographic dimensions of knowledge" (6).[100] And in the US army's militaristic and strategic new knowledge assets, for example, *cultural knowledge* figures as an unclassified concept to wage a successful counterinsurgency (Miyoshi Jager 2007:10).[101] As a consequence, and also largely in response to the breadth and arbitrary interpretations of the concept of *cultural knowledge* with its proximity to normative and frequently

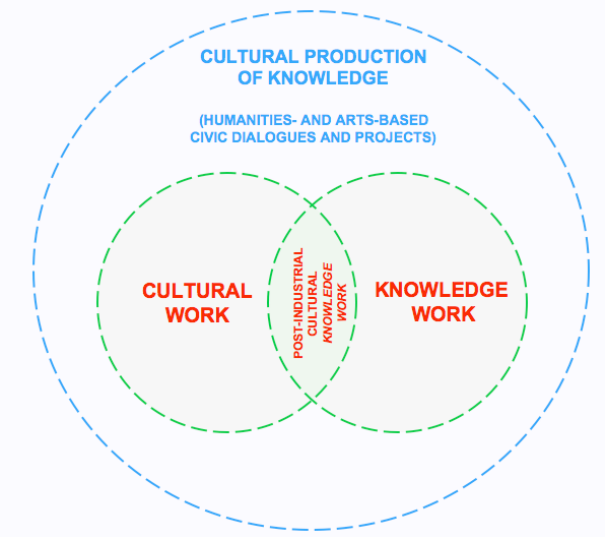


Figure 2.41

[100] Opie points to the foundational significance of cultural knowledge in New Zealand alongside the recognition of *cultural knowledge* as an economic and social resource in the formation of this country's knowledge society (1). Furthermore, using the term in a broad sense, Opie applies it to the global networks of information. Cultural knowledge, he suggests, is the result of global information flows that "intersect with an acculturated location" and "combine with local resources to produce unique possibilities for the creation of meaning" (9).

[101] *Cultural knowledge* refers here to knowledge and information in strategic warefare scenarios. More precisely, the term means information of the "'human terrain'—the social ethnographic, cultural and economic, and political elements of the people with whom the force is operating" (Ibid.:12).

economic-oriented, foundational, and reality-driven schemes and implications, I want to reiterate the necessity for a more open concept of post-industrial *culture* and *knowledge* in which to found this thesis and to blend cultural work and human knowledge-making by emphasising the crucial role and performance of *knowledge work* therein (Figure 2.41). Yet, *what* sort of "knowledge", if any, does *cultural work* in the humanities- and arts-based civic dialogues construct, manage and perform? And: Is there a *future* for post-industrial cultural work as a distinct form of *knowledge work* for the regulation of what Neil Postman (1990) has called "the symbolic ecology of cultures"?

Alternative (Techno-)Socio-Cultural Spaces of Knowledge

Knowledge work is seen as imperative to business success and economic survival, yet, given its importance it is little understood and poorly defined. While knowledge has become a marketable commodity in the economy, it has generated a great deal of interest in its significance, impact and implications. Consequently, the following questions lie at the core of this thesis: (1) In emphasising the link between *knowledge work* and *cultural work* what alternative rationales are there for cultural work and the practices which define it? (2) What practical, social and ecological-cosmopolitical (Sloterdijk 2010:37) challenges exist for *knowledge work* in the post-industrial cultural workplace? And: (3) To what alternative (techno-)socio-cultural spaces of knowledge can we aspire in the world of globally-functioning knowledge cultures and networks, which are ruled by what Banks calls "the universal tyranny of corporate-driven commercial exchange" (2007:181)?

In order to find answers to these questions, I have followed a specific path, both empirically and theoretically. My analysis of the Gotthard Base Tunnel exhibition examined the circumstances (economic, political, governmental, historical, scientific and epistemological) that impact the outcome of cultural work by venturing into the cultural representation of technoscientific knowledge. Having thus provided a discussion of the kind of reflexivity that cultural workers pursue in industrial contexts of cultural production, I have raised key questions about the significance and implications of conveying knowledge in the fields of science and governance. Cultural work, the Gotthard Base Tunnel exhibition has revealed, functions primarily as a "moderator" by sustaining and promoting our normatively salient, economic, technoscientific, political and epistemological knowledge-of-reality. In contrast, *Manufactured Landscapes'* open-endedness and (self-)reflexivity appears to stay intellectually aloof from the creation of values and meaning embodied in cultural production while the deeper implications of the world-sized consequences of our problems pose a fundamental challenge to the reflexive dimensions of our collective social life. Having included in my analysis the developments and consequences of economic globalization, and the conditions under which the new network "knowledge society" has come to influence cultural, scientific and economic human activity—one challenge of this research is to examine the "reflexive" potential of cultural work. Will cultural work in the age of information and corporate knowledge work be permitted to move to a "reflexive" and (perhaps) "remoralised" knowledge space in order to counteract the problems that post-industrial capitalist societies have generated?

In a still rudimentary sense, this section has considered the question of disparity between the conventional understanding of cultural work and its heterogeneous practices—and the new theory of

cultural *knowledge work.* This includes the features of the social, ecological and political challenges, public spaces and practices of cultural work, which will be explored in more detail in the later chapters. In search of a different rationale for cultural work, I have included a number of theoretical approaches central to the debate on the future of cultural work. Throughout, the emphasis of this thesis is on a particular kind of *labourer*, namely the *cultural worker* whose autonomy is challenged by a number of issues/factors, including the reality and omnipresence of capitalist frameworks and capitalist social relations (Banks 2007). They call for a reassessment of the rationale of today's cultural work practices, which are challenged by global corporate knowledge cultures, and the economies and organizations of lifelong and lifewide learning, and knowledge work. On top of that, according to Banks, the globe-spanning networks of communication and trade—economic globalization—seem to fundamentally impact local cultural formations (153). For the time being, my concern is with further exploring the relevance of my approach by adding some—in my view—pivotal thoughts regarding the connection between *knowledge* and *cultural work/cultural labour*, and the meaning of "creative work" outlined by Banks (2007).

The Problem of Knowledge-Making in Cultural Environments

In *The Human Condition* (1958; 1998), her most influential work, Hannah Arendt explores the distinctions between labour, work, and action by developing these categories, which attempt to bridge the gap between ontological and sociological structures. The author aims to uncover the possibilities and potentialities of a *vita activa* by defining three activities *labour*, *work*, and *action*, and describes four possible realms: the political, the social, the public, and the private. According to Arendt, *labour* is the first of the three fundamental forms of activity that constitute the *vita activa,* which comprises all activity necessary to sustain life (for example, reproduction, obtaining food, water, shelter etc.) while *work* is the second activity. *Working* is an activity with a beginning and end, and work leaves behind an enduring artefact such as a tool, a table, or a building. The third activity—*action*—takes place in the public realm. While Arendt arranges an ascending hierarchy of importance for these human activities, she argues for a tripartite division between labour, work, and action, but, moreover, identifies the overturning of this hierarchy as central to the eclipse of political freedom and responsibility, which has come to characterise the modern age. As I have pointed out, the emphasis of this thesis is on a particular kind of *labourer*—the "cultural worker" and alternative cultural production that opens up possibilities for progressive social knowledge practices. Arendt's tripartite concept of labour, work, and action challenges this research as it raises core questions such as of how to redefine *cultural* work (and to expand the concept of what it actually already accomplishes) with regard to the "politics" of this work, the ever more complicated social role of knowledge in society—and the wider ontological, epistemological, ethical and moral dimensions of *knowledge-making* in cultural environments.

Creative Cultural Work and the (Re)Design of Processes of Cultural and Scientific Learning

According to Banks, cultural workers are "very much at the centre of the cultural industry labour process" and "it is they who are primarily responsible for the production of those symbolic commodities

judged to be essential components of the transition to a 'post-industrial', 'creative' or 'knowledge' based economy" (2007:7). In *The Politics of Cultural Work,* Banks emphasises that *creative* cultural work exists "at the very axis point of political struggle between the forces of art and commerce" (8). That fact that labour theorists have traditionally tended to focus on "those more 'authentic' forms of work that underpinned the formation of industrial societies" (Ibid.) is due to a number of reasons. According to Banks:

> Arguably, cultural work, with its connotations of "art" and "creativity", its idiosyncratic practices, evasive structures and its generation of seemingly trivial, superfluous and luxury goods, may have appeared somewhat distant from the "essences" of economic life and so failed to ignite the enthusiasm of those more concerned with the "real" world of manual labour and the formularised production of utilitarian goods. Even students of the service sector, and the now vast range of non-manufacturing-based occupations, have failed to pay much attention to cultural forms of work—buoyed perhaps by a belief that the worlds of art and culture lay outside the remit of economic analysis, or informed by a more widespread prejudice that such frivolous worlds were improper concerns for the serious-minded scholar. (Ibid.)

However and based on the assumption that cultural work might be poised for a new period of intellectual and educational accomplishment, Banks' choice to focus on the creative cultural worker is motivated by the importance of this role in the context of the art-commerce relation. He further notes:

> It is the creative cultural worker, as the *particular focus and embodiment* of the art-commerce relation, who must most evidently balance the desire to indulge in disinterested, creative self-expression against the necessity of accumulation. (Ibid.)

In agreeing with Banks that artistic desires for creativity are not always easily acounted for or controlled by rational economic systems (9), my thesis seeks to investigate the particular features of creative cultural labour in order to examine the dynamic functions of knowledge in public cultural life and its relations to the broader social and political paradigm of knowledge creation. While knowledge is linked to many idiosyncratic practices, the central question here is how cultural work and knowledge serve as an aggregate in creating civic and democratic dialogue opportunities. We are living in a global knowledge society, which shares knowledge about a variety of issues and possibilities, yet we find ourselves dealing more and more with growing restrictions. In *The Crime of Reason* (2008), as outlined in the Introduction, Laughlin argues that the conditions of a number of scientific and technological fields are increasingly characterised by disinformation and ignorance. In contributing to a finer sense of possibility for the cultural production and dissemination of knowledge, the emphasis of my thesis must therefore lie in particular on ongoing research into how to (re)design the processes of cultural and scientific learning. These endeavours are challenged by Laughlin's criticism calling for a pressing, yet serious-minded exploration of novel knowledge-trajectories, the rethinking of our present (techno-)socio-cultural spaces of knowledge and the cultural work practices that sustain them.

In sum, my concern is with further exploring present cultural work in civic contexts of knowledge production in the humanities and the arts, and to study the humanities- and arts-based civic dialogues as a cultural custodian and aggregate of human intellectual activity and post-industrial cultural *knowledge work.* With the aim to reflect on the general character and the outcomes of cultural work, and the ways cultural work attributes meaning to knowledge and positions us as interpretative subjects, I will theorise perspectives and possibilities for future public knowledge "spaces" and an epistemological "model" of traffic for knowledge to enroll nature and culture, objects, things, and science and technology.

While I have paid close attention to the details of cultural production in providing a condensed account of the empirical dimensions of both the Gotthard Base Tunnel exhibition and Baichwal's film-semiotic testimony*,* these cultural settings have revealed the relevance of socially distributed knowledge, and the principal task of the humanities to mirror societal, economic, political, epistemological and ecological circumstances and contexts. While the civic dialogue project of the Gotthard Base Tunnel exhibition constitutes a cultural response by institutional, economic, and political stakeholders based on scientific knowledge's formative and instrumental potentials, *Manufactured Landscapes* creates an awareness of knowledge that combines economic and social issues, things, identities, developments and relations capable of nesting within other much broader non-instrumental ways of seeing, perceiving, understanding and contemplating the world. Yet, in seeking to reach primarily Western audiences and in reasoning about the wider context of the social, ecological and environmental consequences of economic globalization, the concerns that Baichwal and Burtynsky express rely on the humanities' more fragmented site.

My aim is to further explore the social dimensions and political potential of post-industrial cultural work in the arts, and the kinds of ontological and epistemological questions that this work entails. The social performance *Fairytale* at Documenta 12 in Kassel, Germany, in which the artist, curator and cultural commentator Ai Weiwei invited 1,001 Chinese citizens to participate, is a pertinent example of the idiosyncratic and concept-driven strategies which much contemporary art pursues on a grand scale today. In the next chapter I examine the case of *Fairytale* by shedding light on the aims, scope and size of this project whose unconventional dimensions, according to Catrin Seefranz, Head of Communications and Press of Documenta 12, were "'fairytale-like' in many aspects" (2007a, no pagination).

2.4 *Fairytale*—Performing a Cultural Space of Knowledge at Documenta 12, 2007 (Case Study 3)

> Is modernity our antiquity? This question immediately raises another: which modernity and whose antiquity? The history of modernity can be told in many different ways. A majority of the utopian projects of Western modernity have remained a fragment or have failed catastrophically. Many of the structures, forms, and successes that we associate with its concepts seem to have disappeared in present transformation processes or have radically changed in meaning. The ways in which cultures and societies have modernised and are modernising seem to be as different as the rates of transformation, the economic ideas, the cultural images, and the social actors that are the driving forces behind the modernization processes. (Schöllhammer 2007:5)

> First inevitably comes the idea, the phantasy, the fairy tale. Then scientific calculation. Ultimately, fulfillment crowns the dream. (Ai Weiwei[102] quoting the Russian space theorist Konstantin Tsiolkovsky [1857–1935] in the epilogue of the first project proposal entitled *Fairytales* [2007a:9])[103]

This chapter focuses on the cultural, ontological, epistemological and economic dimensions of contemporary art in creating a physical and social space. In 2007, Chinese artist and architect Ai Weiwei[104] recruited via his personal blog[105] 1,001 Chinese for the project *Fairytale* at Documenta 12 in

[102] Chinese given names are generally made up of one or two characters and are written after the family name. Therefore "Peter Miller" as a Chinese name would be "Miller Peter". In order to avoid confusion, I will mostly use both the family name and first name of Chinese authors, hence *Ai Weiwei*.

[103] Between 2006 and 2008 I worked for Ai Weiwei's gallery—Galerie Urs Meile in Switzerland—in different functions such as a consultant for the establishment of an artist-in-residence programme in Beijing, and the handling of the gallery's media relations. I was also in charge of the gallery's public affairs in promoting the *Fairytale* project that the gallery had supported since its inception. In the initial project proposal submitted to the curatorial team of Documenta, Ai Weiwei anticipated the participation of 1,001 Chinese belonging to the resettled population of the Three Gorges area. He wanted to bring them to Germany and turn Kassel into a "temporary home for over 1,001 Chinese citizens" (2007a:4). According to Ai Weiwei's proposal, these people were expected to stay in Germany until their old villages were reconstructed by the government of the Hubei province (Ibid.). See chapter 2.2 *Manufactured Landscapes*—Manufacturing a Cultural Space of Knowledge (pp. 59-60) concerning the resettlement of more than a million people from the Three Gorges region. Ai Weiwei's reflections on the social and political eminence of the issue are also expressed in his text about Liu Xiadong's paintings of the resettled Three Gorges population (2004:4-5).

[104] Ai Weiwei is a Chinese artist, cultural commentator and activist. Born in 1957 in Beijing, his father was Chinese poet Ai Qing, who was denounced during the Cultural Revolution and sent to a labour camp in the countryside with his wife where Ai Weiwei also spent five years. Ai Weiwei lived in the US, mostly in New York, doing performance art and creating conceptual art by altering readymade objects. In 1993, he returned to China. Back in Beijing, he helped establish the experimental artists' East Village. He became the artistic consultant for design, collaborating with the Swiss architects Herzog and de Meuron, for the Beijing National Stadium for the 2008 Summer Olympics, also known as the "Bird's Nest". Although ignored by the Chinese media, he has voiced his anti-Olympic views and accused those choreographing the Olympic opening ceremony, including Steven

Kassel, Germany—an idea Ai Weiwei conceived while hiking in the Alps with Swiss art collector Uli Sigg.[106] According to Nataline Colonnello, *Fairytale* was one of the "most ambitious projects ever presented in the history of Documenta" (2007, no pagination), and was realised during the first five weeks of Documenta 12, which opened its doors on 16 June 2007. Quoting Ai Weiwei, Catrin Seefranz introduced the project in a press text:

> To bring 1001 Chinese citizens to Kassel is to set a condition such that every individual participant has a chance to confront each other with their ordinary lives and their attending one of the most important contemporary art events. It is about personal experience, awareness, and consciousness, as well as direct confrontation and enlightenment they have throughout the whole process (...). (Ai Weiwei; Seefranz 2007a, no pagination)[107]

In my subsequent inquiries into *Fairytale,* I venture into the complex heterogeneous and cultural setting which the project constituted by bringing a blend of human, cultural, economic and institutional actors together in what may be called the construction of a cross-cultural space. Drawing on a variety of texts such as previews and reviews, media responses, interviews, analyses, and cultural comments that accompanied *Fairytale* before, during and after its realization, I explore the project as a specific configured moment and expression of the apparatus of modernity—a projection and cultural image. Accordingly, I (re)investigate in this study the anthropological strategy, cultural awareness, aims and motivations of cultural actors in constructing a social and public space. In seeking to find answers to these issues, I ask the following questions: What civic space did *Fairytale* construct and perform? What cultural mirror of our post-modern, economic and epistemological reality did the project provide? What awareness of types of knowledge, social and economic issues/factors, things, political identities, and relations did it sustain? And: What were the social circumstances and other multiple, perhaps utopian, global (political) issues that accompanied *Fairytale* in creating a civic "dialogue" fostering collective reflexivity and sensitivity?

Spielberg and Zhang Yimou, of failing to live up to their responsibility as artists. His artwork has been exhibited extensively in Australia, Belgium, China, France, Germany, Italy, Japan, Korea and the US. (Sources: Ai Weiwei, Jocks 2007; Coggins 2007; Kelley 2008; Tinari 2007).

[105] According to Karin Seiz of Galerie Urs Meile, Ai Weiwei's use of the blog to announce the plan instead of recruiting people from the resettled Three Gorges population was primarily because the artist wanted to reach people from various social and cultural backgrounds in a short time. Seiz further points to the apparent difficulties the Chinese government has experienced in handling censorship and controlling the internet since the world wide web has gained social status as a major public communication platform in China. Personal mail to author dated 1 March 2010.

[106] See <http://www.focus.de/kultur/kunst/documenta-12_aid_57109.html> downloaded 3 March 2010.

[107] Seefranz further noted: "The first call for applications on Ai Weiwei's weblog resulted in 3,000 registrations (...). The FAKE team—Ai Weiwei's temporary travel agency—will organise and coordinate the trip: participants will be reimbursed only for travel and accommodation expenses. Although in China travel to Europe is very much a privilege enjoyed by the upper classes (to work in Europe, in contrast, is not, as is quite clear from the Chinatowns and other working communities in many places), the *Fairytale* travel group will be heterogeneous and include farmers, teachers, students, artists or engineers of both sexes. The Chinese visitors will be visible as tourists: dress, town guide, maps, lunch bags, all accessories are to be designed by Ai Weiwei and his team. Whether they imitate the classic tourist uniform (basically unchanged from the times of Tati's mesmerising Monsieur Hulot with a pouch for documents) or quote those worn in the Cultural Revolution—we are not telling. One thing is certain: 1,001 guests will discover the city according to plan for around one month and will enjoy the help of guides and interpreters on their way. Another sure thing is that those travelling will document their experiences for Ai Weiwei's artistic work *Fairytale*, just as Ai Weiwei and his team will record the history of *Fairytale* in precise detail" (Ibid., no pagination).

Three Interrelated Projects

While, according to Charles Merewether, *Fairytale* appeared to have responded directly to the three leitmotifs of Documenta 12, namely “Is modernity our Antiquity?”, “What is bare life?” and “What is to be done?”, it was conceived as three interrelated projects that “extend the critical engagement with the concept of China not only in its conception of China as a physical construct, but as a constructed identity” (2007:178). The first project was the invitation of 1,001 Chinese to travel to Kassel in five groups of 200 each with a project participation of one week for each group (Figure 2.42 depicts the total of five flights needed to transport the 1,001 Chinese to Germany and back to China).

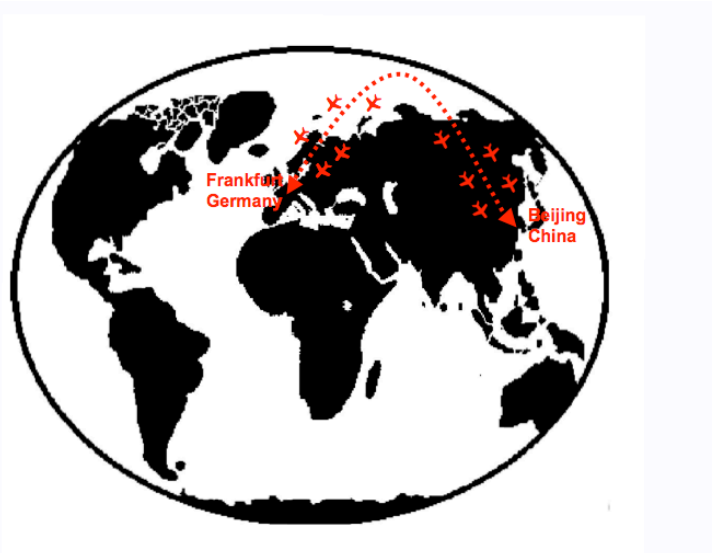


Figure 2.42

The second project was an installation of 1,001 late Ming and Qing dynasty chairs in clusters across the different exhibition venues (Figure 2.43), and the third project was *Template* (Figures 2.44, 2.45), a temporary architectural intervention, which consisted of late Ming and Qing dynasty wooden windows and doors formerly belonging to houses in the Shanxi area, Northern China, where entire old towns were destroyed.

Figures 2.43, 2.44, 2.45 (Detail of Figure 2.44)

The focus of my text is on the first project, the 1,001 Chinese visitors to Kassel (for which I will also use the name *Fairytale*) while the second and the third part of the project will be only marginally included in my discussion. Before exploring the features of the cultural, epistemological and public dimensions, and the social context which *Fairytale* created, I want to shed light on the financial resources and motors of global economic life on which the project crucially relied.

The Financial Dimensions

Rather than accept *Fairytale* as an unquestioned and inherently progressive cultural intervention, my first aim is to more thoroughly investigate how this cultural initiative was embedded in the global economic machinery and capitalist values. Indeed, the central question here is whether *Fairytale* whose funding was generated in a very short time (Dyer 2007:779), and which for many was a "mega-performance" (Münter 2007, no pagination) or a "conceptual extravaganza" (Dyer 2007:778), is an example of the economising efforts of one artist, a contemporary art institution, and two private sponsors. My question is therefore whether there is any evidence that *Fairytale* was essentially the product of impulses of capitalist globalization and capitalist frameworks where profit and accumulation are the key motivations?

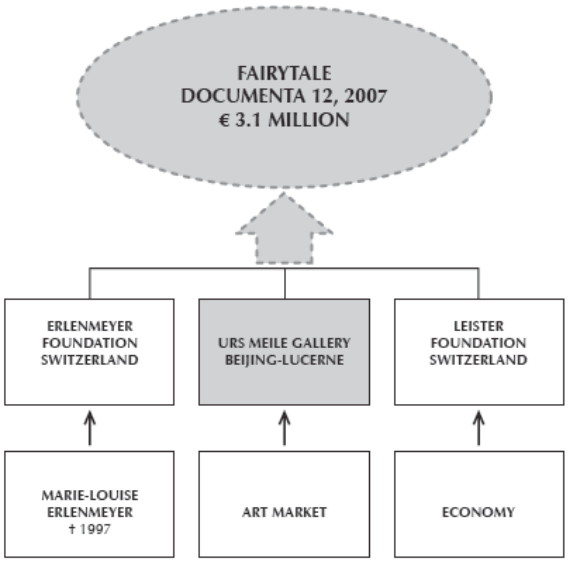


Figure 2.46

Fairytale was financed by the Swiss Galerie Urs Meile,[108] the Erlenmeyer Foundation, Switzerland,[109] and the Leister Foundation, Switzerland (Figure 2.46). The three institutions contributed 3.1 million

[108] Galerie Urs Meile, Beijing-Lucerne, represents a number of internationally acclaimed Chinese artists. See <http://www.galerieursmeile.com> downloaded 1 March 2010.

[109] The *Erlenmeyer Stiftung*, a foundation that assists animal welfare and environmental causes, was established in 1981 by Marie-Louise Erlenmeyer to manage the collection of antiquities she and her husband had assembled. Marie Louise Erlenmeyer, whose husband passed away in 1997, donated her possessions to the foundation. (Sources: <http://www.nytimes.com/1990/07/06/arts/auctions.html?pagewanted=all>; <http://www.easymonitoring.ch/handelsregister/erlenmeyer_stiftung_271094.aspx>;

euros to the production and realization of the project.[110] According to Pollack, since 2004, prices for works by Chinese contemporary artists have increased by "2,000 percent or more" with paintings that once sold for "under 50,000 US dollars now bringing sums above 1 million dollars" (Ibid.). According to Melanie Gerlis, by the end of 2006, China had already become the "fourth largest global art market by value", with a 5% share, while the US, UK, and France were at 46%, 27% and 6% respectively (2008:39). The increasing presence of international art galleries in Beijing, alongside initiatives such as the *ShContemporary* art fair in Shanghai,[111] which was launched in 2007, con-tributed to China's impact as a global art market centre. Quoting Robin Woodland, chief executive of Sotheby's International, Gerlis points out that "the international centres of art mirror the international financial centres" (Ibid.). With a second gallery in Beijing as early as in 2006, Galerie Urs Meile placed itself in the midst of these developments in China where they have spawned massive gallery districts, 1,600 auction houses, and the first generation of Chinese contemporary art collectors.[112]

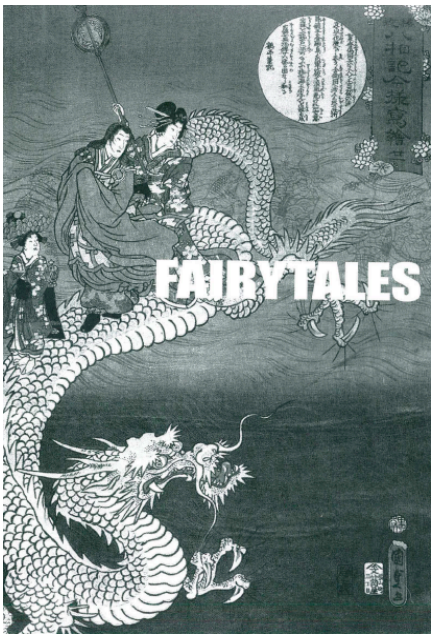


Figure 2.47

and <http://www.selezione.ch/tierschutz.htm> all downloaded 1 March 2010).

[110] Outlining the financial scope of *Fairytale,* Seefranz wrote: "The dimensions of this project are 'fairytale-like' in many aspects—also in the financial terms. As one can imagine, the production and realization of the project are very complicated. The 3.1 million euros required were raised thanks to the initiative of Ai Weiwei's gallery owner Urs Meile, and through two Swiss foundations, the Leister Foundation, Switzerland, and the Erlenmeyer Foundation, Switzerland (...)" (2007a, no pagination).

[111] See <http://www.shcontemporary.info> downloaded 16 March 2010.

[112] See Galerie Urs Meile in Beijing: <http://www.galerieursmeile.com/nav/top/beijing/default.htm> downloaded 1 March 2010.

Sudden Funding

Richard Dyer points to the complex issues that *Fairytale* raised, not only concerning the considerable amount of money involved in producing it, but also regarding its moral implications and social values in society, the arts and the economy. He notes:

> The funding was generated almost immediately, and considering Weiwei's [sic] reputation in the artworld and the weight of Documenta perhaps this is not surprising. However, even though China's economy is experiencing a considerable boom, this is not an economic upturn that enriches the vast rural communities still trapped in the most abject poverty. Perhaps the project could have taken a very different turn that would have equally involved "ordinary" citizens. Perhaps the notion of "Aid as Art" might be one the artist might consider for his next project, taking into account his evident talent at raising huge amounts of funding in a very short time. (Dyer 2007:779)[113]

While Dyer points to more sustainable possibilities and a different scope/future for art projects of the type of *Fairytale*, he sees the Documenta project "loosely based around the fact that the Brothers Grimm compiled their fairytales in Kassel", namely in such a way that the "tenuous conflation of this fact with the tradition of storytelling in China (...) drew a huge amount of media interest" (Ibid.) (Figure 2.47, cover of Ai Weiwei's original project proposal). Indeed, Ai's project stole the show in Kassel and, according to John McDonald, made him one of the "most sought-after artists" for the curators of international exhibitions after Documenta (2008:17).[114]

[113] It is perhaps true to say that by considering Ai Weiwei's fame in the artworld, as Dyer points out, which already existed to some degree before he realised *Fairytale* at Documenta, the rapid funding did not come as a total surprise.

[114] From 15 June until 15 October 2007, Galerie Urs Meile subscribed to a public service conducted by *Argus der Presse AG,* Switzerland (<http://www.argus.ch/en/home> downloaded 8 March 2010) in order to monitor the press, newspapers, TV and radio stations in Europe's German-speaking countries (Austria, Germany and Switzerland), and newspapers in France, Italy and the UK. During this period Ai Weiwei and his projects—most prominently among them *Fairytale*—were mentioned or quoted over 205 times, that is, nearly twice a day. (Source: in possession of author).

Figures 2.48

Critical reflections or comments on the overnight funding of *Fairytale* remained marginal. However, for Andreas Schmid, *Fairytale*'s over-instrumentalization and intended "evisceration" by the media left an "odd taste" (2007, no pagination). Schmid also criticised the project for being superficially marketised through photo portrayals of the 1,001 participants and a range of merchandise articles such as *Fairytale* trolleys, T-shirts and USB-bracelets etc. sold by Galerie Urs Meile in Switzerland (2008, no pagination).[115] The photographs of the *Fairytale* people were displayed in the public for the first time at Art Basel 2008 (Figures 2.48).[116]

Documenta's Relations to the Power of the Market

In their review of Documenta 12 in the Journal of Contemporary Chinese Art *Yishu*[117] in a conversation entitled *René Block's*[118] *Waterloo: Some Impressions of documenta 12, Kassel,* Yang Jiechang[119] and Martina Köppel-Yang[120] provide a harsh critique not only of Documenta, but also of a number of issues such as Ai Weiwei's role as an artist, and the impact of the global market system's power structures on Documenta. With my research emphasis on cultural work and its heterogeneous, reflexive and moral features and forms of behaviours in constructing a social and epistemological space, I will try to discover what emerges from Yang Jiechang's and Köppel-Yang's critique of Documenta and *Fairytale* as a significant part of the whole exhibition. In focussing on the *Fairytale*

[115] See <http://www.galerieursmeile.com/nav/top/artists/product/default.htm?view_ArtistItem_OID=18> downloaded 8 March 2010.
[116] It is certainly fair to state that documenting the emphemeral features of this project in the form of photographs, film (video) and a book in the process of being edited is perhaps the only way to create a cultural memory for those who want to study what they could not personally experience or see with their own eyes. A *Fairytale* book was planned for 2010, but will be published in 2011. The film "Fairytale—inside" edited as DVD in fall 2010 was shown to selected publics as early as 2008. Personal mail to author dated 2 March 2010 from Karin Seiz, Galerie Urs Meile, Lucerne, Switzerland. "Fairytale—inside" offers insights into the preparations and hurdles of the project. However, the documentary by dealing with the hopes, fantasies and the thinking of some of the interviewed participants including Ai Weiwei does not provide new insights into the project that contribute to this case study in substantial ways.
[117] *Yishu* is a leading journal in the coverage of Chinese contemporary art and culture. See <http://www.yishujournal.com> downloaded 8 March 2010.
[118] René Block is an internationally known curator and museum director. He is closely associated with the promotion and study of the Fluxus movement. Block was a member of the committee that chose the curators of Documenta 12, Ruth Noack and Roger Buergel.
[119] Jang Jiechang is a Chinese artist working in painting, video, and installation. He has exhibited at the Venice Biennale (2003), Guangzhou Triennial (2003/2005), the 1st Paris Triennal (2006), the Liverpool Biennial (2006), and the Istanbul Biennial.
[120] Martina Köppel-Yang is an independent art historian and curator from the University of Heidelberg, Germany.

project as an identifiable site of art production and outcome of cultural work, it is, however, not my aim to flesh out the discourses of post-colonialism, debates on the issue of universalism, or discussions on specific curatorial topics in relation to Documenta. As a mode of academic and intellectual inquiry, my thesis is particularly associated with areas where different disciplines come together in the study of the cultural aspects of society such as the practices of producing and mediating knowledge, issues of cultural politics, and cultural and theoretical questions in relation to power and the political, economic and epistemological dimensions of cultural projects.

I first address Ai Weiwei's methods as an artist. In critisising Ai's methodology as "rather undemocratic" and "a kind of feudalist revival" by inviting 1,001 Chinese people to visit Germany, Köppel-Yang points to a minor and more marginal issue, namely the passports of the Chinese that were taken away once they arrived in Kassel. She further laments that it was prohibited to visit the *Fairytale* participants in the building where they stayed (Yang Jiechang, Köppel-Yang 2007:99). As a consequence, in criticising Ai's action plan, Yang Jiechang states:

> Ai Weiwei's strategy within and outside China is that of building up the sphere of influence of a local tyrant. This feudalist attitude is contrary to contemporary consciousness. It will be disastrous if he uses the renown he gained at Documenta to influence contemporary discourse and consciousness in China. (Ibid.)

By further problematising Ai's aesthetic methodology, Köppel-Yang emphasises that his works played an "important part in the show" as they were to be found "everywhere" in constituting a "deconstructive factor from an aesthetic point of view and from the perspective of exhibition practices" (95). By referring to *Fairytale*'s budgets provided by private and corporate sponsors, Köppel-Yang sheds light on the nexus in which the economic, cultural and institutional actors behind *Fairytale* were embedded. In contributing to the establishment of a more arbitrary cultural space, Ai's project—according to Köppel-Yang—was also privileged in the pursuit of public and media relations. She argues:

> On the one hand, we can see that the curators use what is convenient to obtain. Many of the Chinese artists' works in the show come from private collections or commercial galleries like, for example, Uli Sigg [the Swiss collector of Chinese contemporary art], Urs Meile Gallery, Vitamin Creative Space, and Gallery Loft. Moreover, each of the nine participating Chinese artists work either with Galerie Urs Meile or Vitamin Creative Space. I remarked that this kind of triangular relation exists for artists of other nationalities, too. In a high-profile exhibition like this, which is considered the platform of contemporary art, works should be selected differently. One result of this is an imbalance in what concerns the visibility of the artists. Again, I want to mention Ai Weiwei's example. One reason he became so prominent is that he could work *in situ* and could realise his work with a large budget. This is an enormous difference from those artists who are only represented through works, or work fragments,

chosen from a collection. (...) Further, one of the participating artists, Danica Dakic,[121] told me that until very late, about one month before the opening, Documenta invited the media to report in more detail about the exhibition and the participating artists. Ai Weiwei had his own press team and thus directly addressed the media. Therefore, the media reported widely on his work and he became the real star [Figures 2.49, 2.50]. Most of the other artists did not work that closely with the media; therefore, their work stayed rather unremarked upon. (Yang Jiechang, Köppel-Yang 2007:96)

In this respect and according to Köppel-Yang, Ai's work might indeed represent what we can consider a "kind of cliché" by constituting perhaps the "best example" of clichés about Chinese culture (95). More importantly, the subject of this cliché, Köppel-Yang adds, might be ideological in its core (Ibid.) making her assume that art has disappeared and the artist has become "more and more invisible" (Ibid.).[122] Moreover, for Köppel-Yang the nucleus of the problem here is the possibility of an all-pervasive and "very scary" ideology, one that promotes "the disappearance of the individual in the process of globalization" (Ibid.).

While it now seems at first glance that *Fairytale* and the cultural energy it unleashed in the context of Documenta might have failed to create new forms of cultural expression beyond or alongside market culture, I want to more thoroughly explore the civic space which the project temporarily generated and performed. By exploring the social and public aspects of *Fairytale*, my focus lies on the epistemological and political potentials of the space it created by raising questions about the aims of cultural work to link public interest and discourse to the civic issue of bringing 1,001 Chinese people to a leading art event in Germany. In my conclusions at the end of this chapter I will discuss these issues in relation to the enormous global changes which challenge the creation of a world of commonly-shared wealth, and a different *politics* for cultural work and knowledge creation to enroll people in processes of collective thought.

Figures 2.49, 2.50

[121] See <http://www.danicadakic.com> downloaded 8 March 2010.
[122] Köppel-Yang shares her argument with Amine Haase, the editor of the German magazine *Kunstforum International* (Ibid.). Both Haase and Köppel-Yang base their insights on personal observations at the three 2007 summer exhibition sites, the Venice Biennale <http://www.labiennale.org/it/Home.html>; the sculpture projects of Münster, Germany, <http://www.skulptur-projekte.de/aktuell/?lang=en>; and Documenta 12 in Kassel, <http://www.documenta12.de> (Ibid.). All downloaded 8 March 2010.

The Social Scope

While Seefranz raised questions about the possible images and rumors emerging in both the public and the media, and pre-imagined the scope and possibilities of social exchange of the Chinese strolling the streets of Kassel by anticipating the staging of *Fairytale* at Documenta, she also asked what would be left once the project had come to an end (2007a, no pagination). In contrast, Philip Tinari, in an attempt to grapple with the core of Ai’s project, points to its experiential, psychological and inherently cognitive features:

> The original concept of the artwork was simple: Round up 1,001 Chinese people [Figures 2.51, 2.52, 2.53] from the artist’s sprawling, blog-mediated social network, give them matching clothes and luggage, fly them en bloc to Kassel, billet them on bamboo bunks in Ai-designed temporary quarters inside an old textile factory, and set them to wandering the city for the three-month duration of the show, which opens June 16. A spokesperson at Ai’s studio says, “To design also means to set up a condition, which makes individuals change. The project is about a new way to communicate, to participate, a new spiritual condition”. (2007:453)

Figures 2.51, 2.52, 2.53

Now that we have seen how the Gotthard Base Tunnel exhibition engages audiences in an instrumental understanding and experience of technologically-based ideas and how *Manufactured Landscapes* brings the ecological/global consequences of our being-in-the-world as human and economic actors to our awareness, I want to ask: What is the social, communicative and epistemological nature of *Fairytale* then in constructing a civic space for humans to interact and exchange in? At the end of the project, Ai expressed some of the ideas and aims by reiterating the possibility to (re)create awareness and knowledge in social individuals:

> I grew up in Xinjiang within a hardcore communist society—we got all our education in labour camps. Today, it is a very different time; the development of political, economic, and technical systems has brought us to a completely new age. At the same time, I think the old systems and power structures, based on the old thinking, are still here—especially in China, but also in the West. I believe that personal awareness and experience is absolutely essential for social

> change; that change should be based on an individual confrontation with reality. When Documenta asked me to do a project, I really wanted to do this exercise, *Fairytale*, of bringing 1,001 people to the event as a kind of disruptive intervention. It was not a specific commentary on Documenta—or on any other show or fair still operating within the old framework of thought. This way of presenting (art), the kind of communication, who is doing what, how it is received—it is all based on the old structure. My project draws from personal effort and results in an individual engagement, no matter who the viewer is—somebody who is an art-savvy or somebody who does not know art at all, but is just willing to have contact with this experience. (Ai Weiwei 2007b, no pagination)

While, according to Tinari, people in China (where Ai Weiwei is a figure of "Warholian celebrity" [Cotter 2007:24]) have "acerbically" taken to calling *Fairytale* "Yellow Peril" (2007:453), the dislocation of 1,001 Chinese to Germany was a candid social venture for Ai, an engagement which had less to do with art, and much more with an operation and the design of a different collective reality, a different communicative structure and a different social environment. The artist's search for social practices and more "authentic" and "alternative" experiences and ways of life may have indeed encompassed, as Coggins suggests, "both clear-eyed functionality and conceptualist high jinks" (2007:125), as he examined human needs. According to Coggins:

> To encounter the project was also to contend with the indelible factualness of it—the piece was not a proposition, these people were *here.* The participants, who applied for the trip through Ai's blog, varied widely in their ages and personal histories (ranging from peasants to poets to students), their previous travel and their susceptibility to the romance of what, for many of them, would be their first trip outside China. The piece was at once invisible—the public could not enter the living area—and extremely physical. A crucial experience for Western viewers was imagining the reactions of the Asian visitors, which, rare in a conceptual work, created a sense of empathy. The Chinese travellers could be seen bicycling around town, playing soccer games, singing karaoke, or simply taking in the various exhibitions. (120).

Thus, for Coggins *Fairytale* was, ideally, a fairy tale for the participants, and the dislocation of the 1,001 Chinese mirrors Ai's own departure from China in 1981 (Ibid.). In legitimising *Fairytale* as a project far beyond by what it may be taken for at first sight—paid vacation for 1,001 Chinese in Germany—Ai himself regards it as a "new kind of artwork (...) that incorporates people's expressions" in a "completely new situation" in which they become "active participants in their own life experiences (Ai Weiwei, Jocks 2007:442-43). According to Ai, we inhabit a world characterised by a "new freedom of thinking", and the participants in *Fairytale* turned themselves, he claims, into a work of art (442), a work of art which the artist sees embedded in the social, economic and political conditions of globalization and a technologically-based post-modern whole. Yet, the material and economic re-sources that Ai engaged by giving his "humane conceptualism" (Coggins 2007:118) a face in seeking to encompass "what we can never be sure of knowing" (125) raises questions not only about the

methodology and financial scope of this "mega" performance, but also about its sheer size—one that seemed to perfectly match with what Dyer calls the "ten-tonne truck that was Documenta 12" (2007:779). In the next section, I consider the ontological and epistemological significance of *Fairytale* and what it produced and suggested in organising and focussing energies around life.

Fairytale's *Knowledge Claim*

Apparently born out of Ai's desire to both interpret anew and to provide a collaborative and cultural response to the social, economic, political and post-modern conditions of life and human society seen from a more gobal point of view, the artist developed the *Fairytale* project based on the idea of "stimulating" and documenting "experiences and knowledge gained in direct contact" between humans (Ai Weiwei 2007a:3). The central idea was to filter out a narrative around new possibilites for human interaction (Ibid.). What, according to Coggins, thus essentially constituted the result of Ai's "humane conceptualism"—a "brand of cunning, humorous, but ultimately compassionate, provocation" brought to the global scene by the artist (2007:118)—raises questions about the creation of this work and how it served as a catalyst for something new. While a "knowledge space"—culturally speaking—can take any shape a curator or an artist wants to give it, Ai's concept-driven and idiosyncratic affair raises important questions about the (re)creation of "knowledge" in socio-cultural environments. In an e-mail response to my question regarding *Fairytale*'s agency in featuring the transfer of knowledge Documenta's Curatorial Office replied:

> In thinking together the Chinese visitors and the chairs [the late Ming and Qing dynasty chairs], they added up to another strange dimension alongside the major Chinese traditions of storytelling—"Fairytale" as a quasi-contemporary fairy tale (...) and experiment to mediate knowledge in diverse configurations. In the case of "Fairytale" the journey, personal experience and exchange add up to a variety of types of knowledge that differ from books or images. In some sense, "Fairytale" created a possibility for the Chinese visitors to meet the "foreign" (Europe, Germany, Kassel and the international art world) as experiences and impressions were linked to the hope of bearing fruits.[123]

The issue here is on the one hand, somewhat paradoxially, *Fairytale*'s cross-cultural approach in creating social conditions for the participants (and Kassel's population) to meet the "unknown", as Colonnello suggests (2007, no pagination). On the other hand, there is, as Coggins outlines, Ai's "humane conceptualism", which shows the features of an open epistemology that includes the realms of our unknowledge. Yet, to speak in terms of the physical "space" that *Fairytale* encompassed and in an attempt to map out a different future for cultural work and knowledge I ask: *What* opportunity to focus *knowledge creation* and human exchange did *Fairytale really* create? And: *What* possibilities to interact did the project generate?

[123] Personal mail to author dated 11 July 2007 from Manuela Ammer, Curatorial Office, Documenta 12. Translated from German by author.

In *Taking European Knowledge Society Seriously,* Felt, Wynne et al. point to Philippe Busquin's[124] emphasis on the importance of knowing ourselves and our aspirations, our needs and our concerns in a knowledge-based society in which reflexive "social learning" has suffered neglect through the "de-facto emphasis given to instrumental learning and knowledge" (2007:63). These key issues for science and governance highlight relevant aspects of institutional learning and building of social capital not only in science and governance, but in similar ways in the humanities and the arts. Indeed, as an "artwork" and a result of the self-producing strategies of cultural, institutional and economic actors, *Fairytale*'s engagement in constructing a social and epistemological space may be seen as an opportunity of civic dialogue allowing open-ended potentials and capacities to evolve. These include, for example, possibilities to learn in civilised and peaceful ways about other human beings or human differences. In summarising the departure of the last group of the *Fairytale* people, Seefranz appears to confirm this aspect:

> The enthusiasm with which the visitors were met exceeded all expectations: bicycles were collected, football tournaments were organised and crash courses in Chinese were attended. On a daily basis new invitations for joint activities with the Chinese guests arrived. In Nordstadt, home to the 1001 guests and a district of Kassel which has a rich history of travel and migration, the commitment was especially spontaneous and self-evident: Chinese characters were added to the signposts, the Döner restaurant was transformed into a Karaoke bar. (2007b, no pagination)

For Felt, Wynne et al., whose views arise from within a STS perspective focussing on science and governance, such "less mainstream forms" (2007:63) of learning, which are indeed an integral part of *Fairytale*'s social, responsive and cultural reach, constitute important experiences. They provide "insight into the assumptions which tacitly shape our own understandings and interactions (...), and learning about the integrity of others whose ways of life and thought we may be tempted to assume are just irrational, disruptive, even threatening" (Ibid.). In emphasising the importance of reflective learning about the dimensions of our unknowledge and the limitations of our knowledge, Felt, Wynne et al. further point out:

> Awareness, in an ethical and reflective intellectual sense, of the limitations of our knowledge, thus modesty in the claims we make with it, is another crucial learning dimension of a mature knowledge society. Awareness of "the other" can also be usefully enlarged to include not only different cultures and their autonomy from our ways and means; but also (...) the epistemic other, of the *unknown* which always lies beyond our positive knowledge (...). (63)[125]

From a much deeper point of view the issue and implications arising here, as Felt, Wynne et al. point out by referring to Ian Hacking (1989), are those of ontological and epistemic uncertainty. In

[124] Philippe Busquin was European Commissioner for RTD in 2004.
[125] Felt, Wynne et al. refer here to scientist-philosophers such as Michael Polanyi (1958) who defined the *unknown* as an "essential ethical inspiration for scientific research practice" (2007:63).

this respect, my scrutiny of *Fairytale* as a humanities- and arts-based civic dialogue raises questions about the intellectual, cognitive and epistemic trajectories of cultural work in promoting distinctive forms of cultural learning and human imagination. As we have become increasingly dependent on scientific knowledge's formative and instrumental power (Felt, Wynne et al. 2007:64), I discuss these issues and the purposes we want our epistemological objectives to serve in my conclusions of this case study and in the light of the earlier findings in the two previous studies. Clearly, in view of the social relations and economic complicities that my analysis of *Fairytale* has revealed, but also in view of the actual and real pressures to which cultural production and learning are exposed, a pressing concern must be to ask what prospects there are for the *political* potential of cultural work in constructing a different "knowledge space".

The Political Scope

In considering *Fairytale*'s contributions to building social capital and value, and producing highly divergent perceptions in the framework of Documenta, there is, in my view, a necessity to discuss the project from the perspective of its political ambitions and potentials. While Documenta left many of the visitors "lost and confused" (Searle 2007:23), the *Fairytale* project raises important questions regarding several aspects of its social and political function and the practices of cultural work. By drawing on the excerpt from Schöllhammer's editorial note at the outset about the multiple aspects of the contemporary "modernities" that we inhabit (2007:5-6), *Fairytale* can be seen as a cultural image of our modern world. Furthermore, the stage which *Fairytale*'s stakeholders produced and on which the 1,001 Chinese performed provides, in some sense, a cultural mirror of the idiosyncrasies and imperatives of the modernization processes, economic ideas and instrumental pursuits involved. Yet, the intellectual and emotional core of the whole project creation appears to be rooted in Ai Weiwei's personal life experience resulting in what Coggins referred to as Ai's "humane conceptualism" (as we have seen). In a response to Jo-Anne Birnie Danzker concerning the moral purpose of art in the West and its concern with the social welfare of others, which was replaced in the twentieth century by a much greater emphasis on the individual, subjectivity and individual vision, Ai explains:

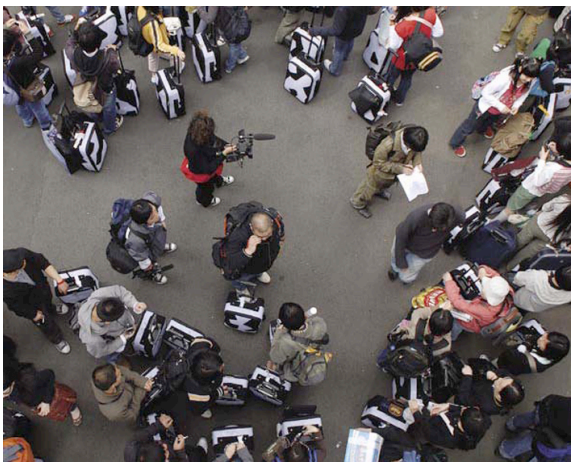
> Because Western society became more democratic, you don't have unified interests. But in China artists never had a common goal—maybe only for a very short moment, in my father's generation, when they were fighting for the nation—but on the whole artists were only seen as a tool for social change. So who is going to use this? This is the ideology of the communist party and how they are going to use it is to sacrifice individuals' feelings. That which is related to the private individual is dismissed and cancelled. This is the condition here in China and Russia. The result is only one type of propaganda. This is, then, not coming from the heart, but from policy. (Ai Weiwei, Birnie Danzker 2008:19)

In emphasising his faith in the sophistication and the knowledge of the individual, that is in the "individual as the bearer of moral responsibility for the betterment of society", as Birnie Danzker points out (Ibid.), in a conversation with Heinz-Norbert Jocks, Ai puts his thoughts into more precise terms in an

attempt to grasp the meaning of life and an ethics of freedom:

> It [life] comprises individual thinking, an individual way of life, individual paths and methods. In my opinion, the individual system, that is the kind and way of life people live, is the last and also most important form of expression of an individual in society. Humans who are not in the position to experience this are like corpses. The task of human life consists in searching for the authenticity of the individual life. (Ai Weiwei, Jocks 2008:239; author’s translation)

As my thesis, as a contribution to discussions challenging the ethos of individualistic self-interest, suggests, Ai’s emphasis on the individual raises core questions about issues concerned with the problematic relationship between individual flourishing and human excellence. According to Köppel-Yang, Ai’s methodology and actions made problematic the use of aesthetically de-constructive options, and what he did with the economic frameworks was to exploit (and not resist) his own personal profit in today’s globalization of the world. I must admit that I have mixed feelings about this attitude. The aim of my thesis is not so much to disentangle ambiguous motivations, but to raise questions about the potentials of “cultural work” made urgent by the predominant idiosyncrasies and socio-ethical/epistemological claims underlying the *Fairytale* project. In my subsequent conclusions I will explore these issues concerned with our subjective, collective and political awareness, the global dimensions of cultural production and consumption, the problems of the production of the common and the production of social life, and our problematic understanding of cultural, ethical and moral values that are in my opinion not represented adequately today.




Figures 2.54, 2.55

2.4.1 Conclusions

The *Fairytale* project provides an example of the cultural, economic, ontological, epistemological and political dimensions and interrelations characterising an arts-based civic "dialogue" whose scope is clearly beyond the usual mandate of a major art event such as Documenta. From an overall view, the project's physical, monetary, epistemological and public features reveal, however, a rather mixed record of achievements. *Fairytale* was financed by a group of cultural and private stakeholders in Switzerland, including two prominent Swiss collectors of contemporary Chinese art and Ai Weiwei's gallery Urs Meile. *Fairytale*'s realization involved large financial resources to transport the 1,001 Chinese participants to Kassel, Germany, and provide logistics and accommodation for the whole duration of the project. The funding was generated almost immediately and the costs amounted to the considerable sum of 3.1 million euros. In view of Ai Weiwei's prestige in the artworld and the significance of Documenta, the rapid financing did not come as a surprise (Dyer 2007:779). Evidence presented in this study underpins the notion that *Fairytale* was largely the result of impulses of capitalist/economic frameworks where profit and accumulation are the key incentives.

Fairytale constructed and performed a more ambiguous experimental and experiential social environment with a significant impact on the project participants, the visitors to Documenta, and the population of Kassel. In response to my question at the outset concerning the project's civic scope, Documenta's Communications and Press Office commented on the sense of empathy the project created by portraying Yue Luan, a member of the group of the last 200 *Fairytale* people (Fig. 2.53):

> "This really is a Fairytale!" enthuses Yue Luan. She is standing in the middle of the courtyard clad in a floor-length, bright-blue dress and appears remarkably unimpressed by the preparations for their departure. She prefers to talk enthusiastically about her impressions of the past few days. By taking part in this project, she has felt like an actress in a Fairytale. Dressed in a traditional Chinese costume, she even danced in a special performance on Friedrichsplatz, which she related in detail to her mother and grandmother upon her return home. "I really was a princess!", Yue Luan exclaims. "Everybody took a picture of me!" She admits to finding Europe far more sympathetic than she had imagined. Everyone has been so friendly, even waving at her from a distance.[126]

To summarise, *Fairytale*'s civic dialogue process engaged numerous people in "dialogue" possibilities and demonstrated a capacity to develop social exchange across ethnic, national and gender lines (Figures 2.56, 2.57, 2.58). Additionally, in contributing to Documenta as a paradigm of civic community engagement, *Fairytale* challenged the notion of art and especially that of the communal and political space by which culture and art are conventionally framed. The project's massive

[126] See <http://www.documenta.de/987.html?&L=1> downloaded 23 March 2010.

material, financial and unecological scope by bringing 1,001 Chinese to Germany to conduct an emphemeral socio-cultural experiment remains, however, a highly questionable affair.[127]



Figures 2.56, 2.57, 2.58

Fairytale's *Attempt to Institute the Individual and the Common*

Drawing on Ai Weiwei's original concept entitled *Fairytales* (2007a), the anthropological motivation of the project was to contribute to more sustainable foundations of the individual, culture and society by promoting an individual, collective and global awareness of issues such as the "common horizon beyond all differences" (5). "What has to be done, what do we have to learn in order to cope intellectually and spiritually with globalization?" Ai asks (Ibid.). And "Is art the medium for this knowledge?" he ponders (Ibid.).

Having engaged participants and audiences in what for Ai was an experience of social and cultural innovation, and perhaps having turned some of the visitors to "gray Kassel", as Holland Cotter suggests in pondering Documenta 12, into thinkers about "how to live an ethical life through art" (2007:24), the question at stake is whether *Fairytale* has indeed galvanised creative potential in building a civic space for global cross-cultural learning and knowledge. Clearly, my theoretical and epistemological concerns are about the role of cultural spaces and cultural work in discussing the interrelations of globalization, human awareness and interests, and the social, economic and political aspects of knowledge creation in the humanities and culture. These are precisely the kind of issues which Yang Jiechang and Köppel-Yang address in criticising the negative effects of the global dimensions of cultural production and consumption. In lamenting the power of the market, the vanishing authority of big exhibitions, and the loss of spirituality and individuality, Köppel-Yang argues:

> I feel it is the sad result of a larger development within the globalised art world where the power of the market becomes more and more important. (...) Actually, the situation of the art world does not differ from that of the field of politics and the economy. With globalization, the influence of politicians and leaders from democratic countries becomes less and less important, and that of financial interests, on the contrary [sic], increases. In the art world there is a similar development (...): the loss of spirituality, of a critical attitude, of art, of the dis-

[127] I am well aware that by criticising *Fairytale*'s ecological footprint, many problems and challenges of even vaster magnitude and of the economic interests underlying them pose a much more fundamental problem for *the tragedy of the commons* discussed by Garrett Hardin in 1968 in *Science*.

appearance of the individual, the artist. (2007:100)

By giving some indication as to why *Fairytale*, and its epistemological claims, provide a more problematic and idiosyncratic space of knowledge, it is necessary not to iron out the paradoxical position and perspective which the project entails. In light of Köppel-Yang's notion of the loss of spirituality, critical art and the individual in a globalised culture, *Fairytale*'s emphasis on the foundations of the individual and the collective at first glance provides a meaningful social and epistemological reach. However, based on Köppel-Yang's critique of its methodology and use of aesthetically de-constructive means (by alluding here primarily to the late Ming and Qing dynasty chairs and *Template*), the project, in constituting a "kind of cliché", as Köppel-Yang suggests, was perhaps centered around an ideological scheme contributing to the commodification, decontextualization and deprival of the critical potential of art. Thus, being confronted with Köppel-Yang's critique of the loss of art's authority, *Fairytale*'s epistemological scope raises questions about its contributions to the social and the political, calling for a re-evaluation of the role and the aims of cultural work in generating "civic dialogues". In other words, *Fairytale*'s intellectual compass points to the necessity to evaluate our ways of addressing issues of individual freedom, spirituality and collective life in humanities- and arts-based public cultural settings and dialogues. From the perspective of cultural work and knowledge creation, another challenge which I see arising is to ground these issues, as Hardt and Negri in *Commonwealth* (2009) point out, in the wider picture of a social and economic order of the common (x).

The Creation, Investment and Exploitation of Social Life

By problematising the epistemological terrain and political scope of *Fairytale*'s practice as a civic dialogue project, I look at it in a more selective way with the purpose of encircling the nature of cultural work and knowledge in particular. Overall, and from the perspective of the public "dialogue" which *Fairytale* generated, I conceive it as a projection/image of the idiosyncratic apparatus of modernity. In addressing primarily key social and epistemological challenges, I raise questions that point to the possibilities of a different form of thinking/strategy and practice to support the common, in particular on the global level. Along these lines, my interest lies in the role of civic and cultural spaces of knowledge and cultural work with the aim on mind of further exploring the relations between human needs and the creation of knowledge in the humanities and culture. From the perspective of my own epistemological stance, Köppel-Yang's analysis reiterates several aspects of my conclusions in the case of *Manufactured Landscapes*. The first is, according to Banks, that cultural actors appear to be driven by "primarily (if not entirely) (...) instrumental, status-seeking (and economically acquisitive)" artistic endeavours (2007:161). The second is an orientation that pursues primarily instrumental values which "decontextualise, commodify and (...) (arguably) divest oppositional art of its critical power" (157). And the third aspect relies entirely on Adorno's argument that cultural workers in reflexive modernity continue "to fasten on the culture-masks proffered to them and practise themselves the magic that is already worked upon them" (Adorno 1991:82; quoted in Banks 2007:160). Clearly, there is no question that the reasons for the proliferation of art are mainly if not exclusively economic. Culture—as *Fairytale* demonstrated—attracts visitors and the media, leads to economic activity and is an integral part of the

global culture industry. However, it has now increasingly become apparent, as the case of *Fairytale* also shows, that art itself and the cultural work underlying it have themselves become a more arbitrary enterprise oscillating between individualistic self-interest and problematic socio-ethical claims of community engagement. Moreover, I want to suggest that the ambivalent relationships between cultural production, cultural and human values, and an omnipresent market system are linked to what Hardt and Negri have diagnosed as the impact of capital in the processes of globalization through which "capital not only brings together all the earth under its command but also creates, invests, and exploits social life in its entirety, ordering life according to the hierarchies of economic value" (2009:ix).

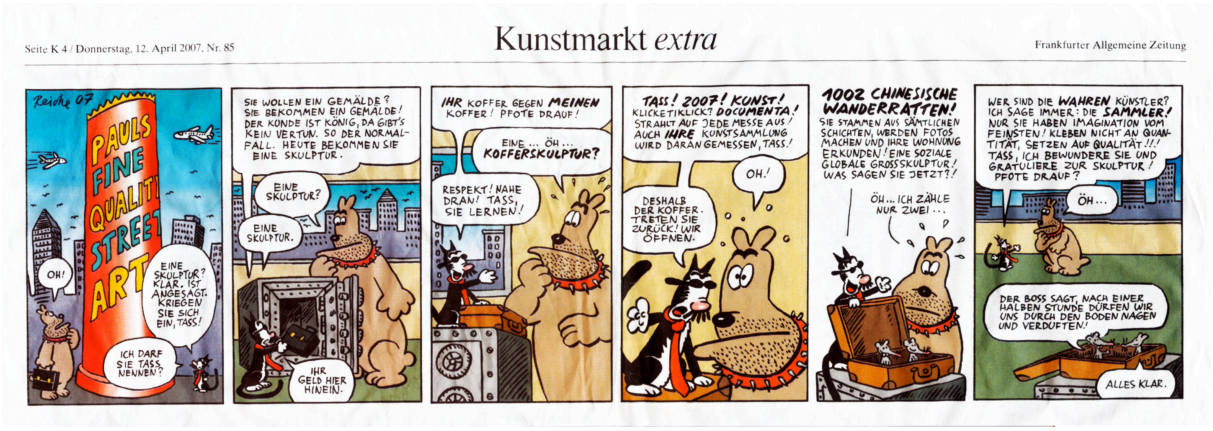


Figure 2.59

A comic strip about *Fairytale* entitled "Art Market *extra*" illustrates these issues best as it highlights the generally problematic stance of art and culture today in a world ruled by the mechanisms of a global market system, which is contaminated by its corruptions (Figure 2.59). The brief narrative published in the German newspaper *Neue Frankfurter Zeitung* transforms the rumors about the *Fairytale* project into a fictional sales talk about art. The encounter between an art dealer and a collector is represented by cartoon figures—Paul, the cat and trader, wearing dark sunglasses and a red tie, evidently the owner of "Paul's Fine Quality Street Art", and an unshaved bully and prospective art buyer. In an attempt to persuade the collector of a new form of art made available at Documenta by referring to it as a "briefcase sculpture" of "1,002 Chinese brown rats", Paul describes the artwork more precisely as a "social, global big sculpture" of brown rats that "stem from all sections [of the population], will take photos and scout your apartment!". In flattering the sceptical collector who counts only two rats, the dealer responds: "Who are the true artists? I have always said: the collectors!". In the last sequence the rats recall a dubious agreement with their "boss", that is: to gnaw a hole through the briefcase and hop it.

Actor-Network Theory (Material Semiotics) in Fairytale and Cultural Work

My final reflections on *Fairytale* from the perspective of Actor-Network Theory serve to raise questions with regard to the theory's inspirational potential as well as its capacity to explore issues in relation to the social and political, and to shed light on the practices of knowledge generation as well as the

creation of a cultural space for learning. My discussion will focus on the question as to how the actor-network approach has contributed to a deeper understanding of practices that have shaped the actions of the conceptual, cultural, technical and financial actors who developed and formed the project.

Fairytale was enacted through different socio-material configurations, realities and practices such as the announcement of the project on Ai Weiwei's blog in China, the recruitment of the 1,001 participants, project funding, the use of technological artefacts (airplanes, buses, trolleys etc.), transportation, the building of infrastructure (lodging), the provision of food, the shipment of 1,001 late Ming and Qing dynasty chairs from Beijing to Kassel, and the construction of the wooden sculpture *Template,* to name only a few. In describing *Fairytale* as an assemblage of human and non-human entities that have provided agency to all the things involved and a heterogeneous blend of actors in play (Ai Weiwei, the curatorial team and technical staff of Documenta 12, the employees of Galerie Urs Meile, the Erlenmeyer Foundation and Leister Foundation etc.), it is not possible to separate the range of these actors and their accounts from the juxtapositions of particular socio-material practices which created a hybrid aggregation of material-semiotic configurations, relations and realities (cf. Law 2009b). The case study has thus sought to conceptualise *Fairytale* as a socially and materially heterogeneous engagement in the framework of Documenta 12.

A major focus of my explorations has been on the cultural, economic, epistemological and political scope of this living intervention which, as an arts-based public dialogue project, created an ontological and socio-political space. The (variable) human identities of the 1,001 Chinese that came in five groups of 200 people each to Kassel constituted the final materialization of this temporary cross-cultural space. From the perspective of ANT, the significance of materiality speaking on behalf of non-human entities in an assemblage of relations constitutes a central element. However, in actor-network webs the distinction between *human* and *non-human* is, according to Law, of little initial analytical importance as "people are relational effects" (2009a:147). The point is that my own situated intention to describe the world of *Fairytale* has relied on the human narrations of various material-semiotic sources such as texts, media responses, interview excerpts, photographs, analyses and cultural comments. My intention to come to terms with *Fairytale*'s qualities and aims has thus materialised in a synthesis of descriptions and reflections of other human actors interwoven into my theoretical understanding of cultural work in this particular cultural setting. In other words, my situated undertaking to describe *Fairytale* from the perspective of the available empirical material has been constrained by constituting a methodological limitation.

However, Actor-Network Theory's material semiotics has contributed to numerous insights concerning the ways realities and knowledges are enacted together. Material semiotics, as the two other case studies have demonstrated, explores the enactment of realities—the *ontological*—and describes the making of knowledge—the *epistemological* (Law 2009a:154). Thus, in this case study, Actor-Network Theory's specific material-semiotic sensibility has opened an epistemological horizon for questions about the civic space that *Fairytale* constructed and performed, the cultural mirror of our post-modern and political reality that the project has provided, and the awareness of types of knowledge, social, economic and global issues, things, identities and relations which it has sustained. Actor-network analysis is always concerned, as Law points out (Ibid.), with the assemblage of these

issues, heterogeneous realities and knowledges that combine and enact the social and political, and normative/moral questions in relation to the epistemic and ethical tensions within knowledge.

From the perspective of ANT, *Fairytale*'s potentials in constructing a social and epistemological space to institute the individual and the common can be seen as an effort of the self-producing strategies of cultural actors. They have created opportunities for civic dialogue that allows open-ended potentials and capacities for evolution. However, while the staging of 1,001 Chinese at Documenta 12 and its funding in particular were embedded in capitalist and economic frameworks where profit and accumulation were the key impulses (as the findings of the study suggest), the project's knowledge politics and ways of re-presenting things raise questions with regard to what Puig de la Bellacasa describes as the "caring [for] relationalities in an assemblage" (2011:94). Puig de la Bellacasa's emphasis on the political dimensions of caring for knowledge production by representing matters-of-care as an "aesthetic and political move" (Ibid.) challenge my analysis of *Fairytale*. The project's socio-material-semiotic engagement and world building abilities may have enacted realities and fostered individual and collective sensitivities towards learning and knowledge among the 1,001 participants and the publics involved, but as a social and public performance it appears to have been impacted by both the gentrification and commodification of public space (Banks 2006:463), and the hegemony of capitalist social relations affecting the moral foundations of human engagement. This leads me to the core question of *Fairytale*'s contributions and capacities to articulate ethically and politically demanding issues.

I believe that in the case study of *Fairytale* ANT's new material semiotics has helped to provide a deeper understanding of how realities "are done" as it confirms the theory's assumptions that reality and the real are not destiny, as Law points out (2009a:155). From the perspective of ANT's relational semiotic diaspora, "the good and the bad are embedded in the real" and this means that the real is also embedded in the good and the bad, as Law writes (Ibid.). As a consequence, it can be said that the actor-network approach has revealed in this study that "what is real may be remade" (Ibid.). The point is that ANT itself in describing the real can be conceived as an "ethically charged act" (Ibid.), yet, if we examine *Fairytale* as an act of ethical and political will, the project has not revoked what Law refers to as the "endless and partially connected webs that enact the real" (Ibid.).

The remaining pertinent question under review is whether there exists a *different* mode of "storytelling" for *Fairytale* concerning the enactment of alternative realities and relationalities. Of course, *Fairytale* could have followed a different strategy in designing forms of communication and conveying knowledge in a particular space and place, in creating narratives of cultural information, in examining the consequences of its temporal construction, or in expressing (self-)reflexively social, pragmatic, ethical and political concerns/aims. I think what the actor-network approach and its critical stance have particularly unveiled in this case study is that the social and political have been enacted as contingent practices of materiality and heterogeneous arrangements of things, that is: the generation of ambivalent assemblages of realities, relations, and their uncertain politics.

As a consequence, the problem with the approaches of Actor-Network Theory that I finally want to discuss in relation to *Fairytale* is the criticism that ANT addresses the local and contingent, but pays little attention to wider social structures. One of the main criticisms of ANT, as Walsham outlines by drawing on various authors (1997:472-73), is the theory's endeavour to analyse how things "get

done” while, according to the charge, the wider social and institutional structures—the macro-structure of society shaping socio-material practices—are excluded from its scope. While ANT’s analysis of *Fairytale*’s social, political and epistemological engagement has demonstrated how local contingencies work, the analysis of the empirical material, I suggest, has offered a perspective on the material and local agencies as ambivalent relationships between cultural production and omnipresent capitalist social values. The point is that my analysis of *Fairytale* from the perspective of ANT—with a primary epistemological interest in the role of cultural spaces and cultural work in discussing the interrelations of globalization, human awareness and cultural production—has opened a new horizon on the social and political. In problematising knowledge production and dissemination in the humanities and culture, the ANT perspective has opened a critical window on the negative effects of the global dimensions of cultural production and consumption which are enacted by practices that, as Law writes, “make a more or less precarious reality” (2009a:151).

In the following two chapters (3 and 4) I will venture a reassessment of post-industrial cultural work. Included in my reflections about the future of cultural work is in particular the role and function of my extension of *cultural knowledge work*—thought and practice for social and cultural learning and the kind of epistemic practices this could involve. In an attempt to appraise more knowledge-oriented alternatives and their prospects as political models for the future of cultural work, I will draw on the conclusions of the three case studies and attempt to sketch out possibilities of a practise-based ecology/“epistemology” for the cultural workplace and its problems as a propositional state of affairs. These issues will be evaluated in considering possibilities for the establishment of “third” spaces of knowledge (in chapter 5 in particular), and the creation and maintenance of a socially-shared awareness as a key factor for inspiration and hope.

3. Rethinking Post-Industrial Cultural Work and Cultural Spaces of Knowledge

> At the beginning of the twenty-first century, we see modern society with new eyes, and this birth of a "cosmopolitan vision" (Beck 2006) is among the unexpected phenomena out of which a still indeterminate world risk society is emerging. Henceforth, there are no merely local occurences. All genuine threats have become global threats. The situation of every nation, every people, every religion, every class and every individual is also the result and cause of the human situation. The key point is that henceforth concern about the whole has become a task. (Beck 2009:19)

In order to re-evaluate established cultural practices and policies in the cultural production field, we must develop a critical awareness of today's arbitrary ideas and imaginations, and the incentives which drive them. As the case studies show this has not been an easy task. The three studies have served as an empirical anchor from which arguments have been built and conclusions drawn. They have supported me in developing a different understanding of the role of the humanities and the arts and the potential of cultural work. In an attempt to come to terms with a thicket of social, cultural, epistemological/educational, political and moral issues and questions, this useful set of case studies has provoked thought in different areas of contention and civic interest. The case study of the Gotthard Base Tunnel exhibition has illuminated the role and technocratic/reductionist functioning of governance culture in science and the dialogue-making based on instrumental values in cultural environments as a result of institutionalised commitments in the field of politics and the economy. The moral-ecological commitment of *Manufactured Landscapes,* which appears to be at odds with the representation and late realization of compelling social, economic and ecological evidence that the present crisis invokes, has raised questions of how to broaden public interest and involvement in offering knowledge of the multiple aspects of globalization and environmental destruction. And the case study of *Fairytale* at Documenta 12, which has provided valuable insights into the construction of a physical social space to institute the individual and the common, has uncovered a rather mixed record of achievements, as the primary impetuses underlying this project were evidently driven by capitalist/economic impulses, whose key stimuli are profit and accumulation.

Consequently, my aim in this chapter is to address elementary questions regarding the future of cultural work and *knowledge* which I see fundamentally challenged by the wider context of what Beck termed in 1986 *risk society,* epitomising an era of modern society that "no longer merely casts off traditional ways of life but rather wrestles with the side effects of successful modernization" (2009:8). In *World at Risk* (2009), Beck points to the "precarious biographies and inscrutable threats that affect

everybody and against which nobody can adequately insure" (Ibid.). In conceptualising the world risk society as a "*non*-knowledge society" characterised by the global existence of numerous incalculable threats/risks and our non-knowing, Beck sees not knowledge as the "medium", but "more or less reflexive" *non-knowledge* (122). According to Beck:

> Living in world risk society means living with ineradicable non-knowing (*Nichtwissen*), or, to be more precise, with the simultaneity of threats and non-knowing and the resulting political, social and moral paradoxes and dilemmas. Because of the global character of the threat, the need and burden of having to make life-and-death decisions increase with non-knowing. Talk of the "knowledge society" is a euphemism of the first modernity. World risk society is a *non*-knowledge society in a very precise sense. In contrast to the premodern era, it cannot be overcome by more and better knowledge, more and better science; rather precisely the opposite holds: it is the *product* of more and better science. Non-knowledge rules in the world risk society. Hence, living in the milieu of manufactured non-knowing means seeking unknown answers to questions that nobody can clearly formulate. (115)

In redefining and reconceptualising post-industrial cultural work and its epistemic trajectories which play an important role in contributing to the growth of society and culture, a central issue that runs throughout the whole dissertation is the problem of "reflexive" thinking (and "reflexive" social spaces/environments). By drawing on the insights of the case studies and the different societal, cultural, scientific, economic and ontological realities (knowledges) which they mirror and perform, I examine the problem of "reflexive" thinking with the following questions in mind: What prospects are there for public (techno-)socio-cultural spaces of knowledge to engage citizens in processes of reflexive thinking, by acknowledging, problematising and asserting our *non-knowledge* of the world? What reflexivity is needed to sustain genuine contingency (as discussed in the case study of the Gotthard Base Tunnel exhibition)?

3.1 The Recognition of Contingencies, Public Imaginations and (Self-)Reflexive Thinking in the Global Risk Society

Recurrent concerns in the European Commission (EC) report *Taking European Knowledge Society Seriously* (2007) emphasise the importance of "more balanced and explicit articulations of technical 'facts' and 'uncertainties' with wider social values, interests, and imaginations around science, and technology" (32). What Felt, Wynne et al. specifically criticise in this respect are the normative, evidence-based practices, discourses and orientations in regulatory "risk governance" such as those resulting in the discouraging of debate on normative social dimensions to which risk assessment science contributes (33). They claim that these engagements often use language designed to have more rhetorical, self-legitimising and less transformative effects:

> On the global stage, the EC is distinguished by its unapologetic commitments to new concepts of precaution and public deliberation on science. So far, however, much of this engagement remains quite rhetorical. The emphasis is more on the communication than the informing, and conceivable *transforming* of decisions and commitments. Interest seems focused on new procedures more to justify established imaginations and commitments, and to procure "trust" for what remain essentially unchanged imaginations, habits-of-thought, and decision-making processes. This is the disjuncture (...) between the language of precaution and participation, and the persistently technocratic, reductionist and exclusive functioning of the underlying governance culture itself. (41)

Echoing Hacking's (1989) pointing to historians and philosophers' distinction between ontological uncertainty (in behavioural processes themselves), and epistemic uncertainty (in the knowledge we have of them), Felt, Wynne et al. argue (as quoted earlier) that "awareness, in an ethical and reflective intellectual sense, of the limitations of our knowledge, thus modesty in the claims we make with it, is another crucial learning dimension of a mature knowledge society" (63). For them the "epistemic other" of the *unknown* lies beyond the positive knowledge sustained by the "de-facto emphasis given to instrumental learning and knowledge" (Ibid.). Consequently, Felt, Wynne et al. stress the importance of recognising the contingencies which underlie scientific knowledge, its production and uses (67). With regard to the Chernobyl radiocaesium case and these contingencies, and the significance of learning, they argue:

> Because we have often been able temporarily to suspend or externalise the destabilising effects of contingencies, or lack of control, it has been usually misrepresented as uncertainty which will be under control once we have done a bit more research, and experimentation. It is defined more like residual imprecision than authentic contingency. The Chernobyl radiocaesium case is one such example, where the unrecognised contingencies in the knowledge, once tacitly exposed by the failed predictions, were defined as marginal errors which would soon be corrected by adjustments to, not wholesale replacement of, the established knowledge (and its key assumptions) in play. (68)[128]

As a consequence, issues of social, cultural and policy concern in science and governance such as risk, uncertainty and unrecognised contingencies are challenging human (self-)reflexivity and (un)learning—thought and practice for social learning—in constructing "civic dialogues" and designing significant civic engagements through cultural work. According to Felt, Wynne et al., the way to achieve this is through "new institutions and procedures for more inclusive pluralistic discussions, learning, and challenge" (82). It is only, they write, through "explicit official recognition of the ambiguous and open-ended character of supposedly 'scientifically-revealed' public policy meaning that civic

[128] A pertinent example of unrecognised contingencies is the worst US oil spill in decades in the Gulf of Mexico in April 2010 which extended into precious shoreline habitat along the Gulf Coast. Emerging documents showed that British Petroleum downplayed the possibility of a catastrophic accident at the offshore rig that exploded. In 2009, BP suggested in an exploration plan and environmental impact analysis for the well that an accident leading to a giant crude oil spill and serious damage to beaches, fish and mammals was "unlikely, or virtually impossible". See <http://www.npr.org/blogs/thetwo-way/2010/05/gulf_oil_spill_latest.html> downloaded 4 May 2010.

engagement becomes meaningful" (Ibid.). This means, I suggest, that instead of the ontological, epistemological and moral *disciplining* of people that both Turnbull's case study of a malaria vaccine[129] and the socially- and culturally-distributed bulk of technoscientific knowledge in the Gotthard Base Tunnel exhibition suggest, cultural work in promoting "reflexive" thinking should find new ways to publicly address possibilities for (self-)reflexivity. In a similar vein by pointing to the capacities and the virtues of alternative cultural production to enhance possibilities for "self-comprehension and social action", Banks argues:

> Alternative cultural production (...) must in some way be credited for opening up possibilities for self-reflexivity, for engendering more creative and autonomous attitudes and for (at least potentially) furnishing possibilities for progressive social practices—even as these possibilities remain vulnerable to the incursions of commodification and marketization. (2007:164)

As suggested in the case study of *Manufactured Landscapes*, the recreation of social values, interests and signification embodied in the cultural production of knowledge poses *the* major challenge, providing critical/alternative reflexive and ethical viewpoints in contexts of cultural production and consumption, and grasping simultaneously the complex socio-economic-technological post-industrial reality and the *other side* of globalization. How should creativity, meaning and a critical (self-)reflexive understanding of the current unsustainable developments be addressed under the present cultural conditions and by emphasising knowledge's contingent character: that is, our self-inflicted non-knowledge? In the next section I seek answers to this question by venturing into the problem of *knowledge* (reflection), and the cultural production of knowledge in particular in "reflexive modernization"—in a world in which our humanly-constructed threats/risks have become world-sized problems "beyond status and class", according to Beck, that ultimately affect everybody (2009:22).

3.2 Reflexivity vs. Reflection, Epistemic Actors and the Second Modernity of (Self-)Uncertainty

In *World at Risk*, Beck points to the problem of misunderstanding the concept of "reflexivity" (119). By referring to Anthony Giddens' and Scott Lash's view (1994) that "reflexive" modernization (in keeping with its literal meaning) is associated "primarily (...) with knowledge (reflection) concerning the foundations, consequences and problems of modernization" (Ibid.), Beck introduces his thesis by arguing

[129] Turnbull's case study problematises the extension of the knowledge space of Western laboratory science to the "disordered, complex world of tropical disease" (2000:177). Controlling malaria, which for Turnbull is a "multifaceted problem", requires the "simultaneous treatment of a range of interacting elements, given the diversity and local specificity of the disease" (Ibid.). Turnbull's findings are insightful. While his conclusions are framed by the wider question of how to conceive of a new form of communal space for knowledge to embrace "non-experts and other traditions" (216), he considers the manufacturing of the malaria vaccine a challenge to sustain "dialectical interaction between the needs of a particular people, places, technical requirements of vaccines, chemotherapy, insecticides" (Ibid.). In problematising technologically sophisticated solutions and their incompatibility with local conditions and cultural circumstances, Turnbull's case study raises both questions about knowledge's authoritative forms represented by technoscience today (7), and the construction of knowledge spaces as a challenge to explore their viability.

that reflexive modernization is primarily "the result of side effects of modernization" (Ibid.). While he acknowledges the particular difficulty of this distinction of not being "really sharp", as it invites misunderstandings in relation to the issue that knowing and non-knowing are always relative affairs (Ibid.), he notes:

> In the first case [Giddens' and Lash's view], one could speak of reflection (narrowly construed), in the second, of the *reflexivity* (in the wider sense) of modernization—in the wider sense because reflexivity, in addition to reflection (knowledge), also involves the idea of a "reflex" in the sense of the (preventive) effect of *not* knowing. (Ibid.)

Beck's sense of "reflexivity" vs. reflection is indeed welcome. His grasp of "reflexive", which emphasises the dimensions of our non-knowledge, can be linked to the intellectual and cognitive agency of local and global actors that engage in a variety of cultural practices and cultural production fields. In societies increasingly driven by diverse incalculable threats, uncertainties and risks with unknown consequences accompanying them as the environmental disaster of the oil spill in the Gulf of Mexico demonstrates, these actors/agents, I suggest, can further be conceived of as fundamentally *epistemic* actors. In considering the intellectual and cognitive faculties/capabilities of these actors who "act" from within a variety of local and global social, economic and political frameworks, they are also challenged to *react* (in the sense of Beck's notion of "reflex") to the disturbing side effects of what Beck has referred to as the *linear* modernization process. Yet, while the talk of "side effects", according to Beck, "signals a stage in the conflict in which homogeneous expert groups are *still* in a position to exclude other epistemic actors and modes of knowledge as unqualified", "its gradual breakdown" marks, according to Beck, the end of "linear modernization and the beginning of non-linear modernization (...)" (125-26). As a consequence, Beck argues, the operative criterion is "closed versus open" and "consensual versus dissenting agent networks, queries, methods, guiding hypotheses, scenarios, assessments and evaluation of risks and threats" (126).

Beck's view of a second *non-linear* modernity is central to my thesis and the epistemological/cognitive dimensions and action radius of what the cultural production field could encompass in terms of new tasks and reaching out to new civic audiences through public discourse. The key issue here is that from the epistemological/cognitive perspective of civic dialogue-making to encompass different unfamiliar and educational rationalities, questions of non-knowing (also in the sense of our *inability*-to-know and of wilful ignorance, as Beck points out [Ibid.]) arise for *everybody* and mark the change to the second modernity of (self-)uncertainty:

> [T]he foundations of the (economic, technical, political, scientific, etc.) monorationality characteristic of linear modernization, which is oblivious to consequences, begin to crumble. This very monorationality is still advocated today in the guise of systems theory (with the suggestion that functionality and autonomy depend on screening out the external perspective). Both factors—the question of *our own* inability-to-know and the ability to adopt the perspective of alien rationalities—mark the transition to the second modernity of (self-)uncertainty that is simultaneously manufactured by civilization and known. Only then can we pose the general

> question of how these antagonisms and differences of *known non-knowledge* can be interconnected, played out and combined into decision-making procedures in new forms and forums. (Ibid.)

What is at stake here concerns the prospective nature of cultural work and its epistemic scope in civic dialogues belonging to the particular moment of second modernity of (self-)uncertainty/non-knowledge of global risks and threats. As we have seen, there is, on the one hand, our wrestling with the side effects of modernization, and, on the other hand, there are our many ways of organising and classifying modernity, which never corresponded to what was really going on in thought and practice, and never recognised the consequences of these practices (Lash 1999, no pagination). So when we reflect on a new *quality* of cultural work and new impetuses to anticipate the consequences of our activities, actions and practices, how are we to adopt, then, the perspective of different (alien) rationalities, as Beck suggests, and how are we to implement *reflexivity* and *authentic contingency* (epistemic [self-]uncertainty) in modes of collective learning? These issues lie at the core of my thesis and will be considered in chapter 4 and 5.

In summary, in this section and mainly in the case study of the Gotthard Base Tunnel exhibition, the discussion focused on the widely-observed point of the unrecognised importance of acknowledging foundational contingencies, non-knowledge, and the necessity to expose various kinds of uncertainty (for example, in scientific knowledge and the self). These issues are challenging the "reflexive" and open-ended dimensions of learning in a knowledge-centred society with its tendencies to imagine possible learning as instrumental only (cf. Felt, Wynne et al. 2007), as documented in this work. In providing a rationale for an "epistemology" of post-industrial cultural work, I will focus in chapter 4 on the possibilities of cultural work as a distinct practise-based form of *knowledge work* in the face of acknowledged contingency and in search of more deliberate forms of "reflexive" learning through culturally-distributed knowledge which catalyses and links public interest in key civic issues.

Rethinking Established Cultural Practices and Policies

While, as Banks points out, "non-instrumental values appear to have been overwhelmed and discredited by the neo-liberal regime" (2007:168), my commitment to reinvigorate civil society by envisaging alternative work practices in cultural production raises questions regarding the prevailing practices of cultural work in the culture of instrumentalism. These practices, as discussed previously, are challenged by the existing threats, risks, cultural habits-of-thought and our non-knowing—and the resulting social, moral and political predicaments. Furthermore, the rethinking of alternative knowledge spaces in science is challenged by a "persistently technocratic, reductionist and exclusive functioning of (...) governance culture itself", as Felt, Wynne et al. argue (2007:41). My question is therefore, how to rethink cultural work and possible knowledge trajectories in the face of our dominant knowledge traditions which, according to Felt, Wynne et al., are created by "successful channelling", but more problematically also by the "social-intellectual exclusion of ambiguities, contingencies, and alternative potential knowledge"? (66). And what prospects are there for cultural work in the age of corporate

knowledge work and its hegemonic world-view to obtain a foothold in a knowledge space different from the one it finds itself strongly embedded in the present institutional, organizational and economic structures of global cultural industries and capitalist social relations (cf. Banks 2007)?

In view of the significance and urgency of these questions, my emphasis on the necessity to think about the social, epistemological and *immaterial* dimensions/qualities (cf. Hardt and Negri 2009) of cultural work becomes a pressing affair as we are increasingly suffering from a process of amnesia which has led to the marginalization of non-instrumental values, cultural values, public values, ethical dimensions of learning and collectively-shared purposes/aims. Overall, to reconceptualise and re-define a different future for post-industrial cultural work and to explore the possibilities of a different *knowledge ecology* capable of stabilising and nurturing preferred cultural and public spaces requires the imagining and envisioning of alternatives for the cultural workplace.

In seeking to provide a rationale for an "epistemology"/ecology of cultural work, in chapter 2.3 *Preliminary Taxonomy of Post-Industrial "Cultural Knowledge Work"* I have discussed different theoretical approaches central to the debate of the future of cultural work. While I will reconsider the possibilities of knowledge work in the humanities in chapter 4 and 5, I subject some of the key points of Banks' (2007) discussion of the prospects of post-capitalist cultural work to the final required analysis in the next section. And while, as we have seen, the Gotthard Base Tunnel exhibition provides a mirror of the not unproblematic normative dimensions of technoscientific knowledge and the political-economic context and values which it represents (and thus does not "hold out" against the [global] capitalist frameworks that essentially sustain it), I want to simultaneously ask: What perspectives are there for alternative forms of cultural work and knowledge in the face of the prevailing political discourses and the ruling rationalities of the (global) market culture? Moreover, while *Fairytale,* as we have also seen, was crucially dependent on impulses of capitalist/economic frameworks, I further ask: What perspectives are there for cultural work to move beyond the hegemony of capitalist values in order to establish and nurture perhaps alternative knowledge trajectories that sustain the connection between mind, heart and life (cf. Hardt and Negri 2009)? The next sections consider these questions.

3.3 Post-Capitalist Cultural Work

A central point which emerges from Banks' summary of sketches and route maps out of the demoralised terrain of neoliberalism which critics such as Beck, Gorz and Harvey provide is the conviction that the striving towards instrumental ends has "most effectively diminished moral guarantors of selfhood, work and sociability historically associated with traditional life" (2007:168). In view of the antagonism which these critics share in relation to the expansion of market relations and antipathy to capitalist notions of progress, Banks discusses some of the utopian solutions and approaches which they attempt to offer in the present crisis. In arguing that critical social science has turned again "towards utopian theorising in order to propose ideal solutions to the problems generated by capitalist societies" (Ibid.), Banks points to the rejection of the work ethic and paid employment as "governing

virtues of social life" (Ibid.) that many of these utopian approaches have as a common subject.[130] Quoting Beck and Gorz, who both see the technologically advanced risk society characterised by "informal, temporary and part-time work", "endemic underemployment" and the "political economy of insecurity" (169), Banks further points to the "big ask" of these authors to advocate "seismic shifts that would require a wholesale ethical retooling of societies" and involve people "being given the right to choose their own methods of working and not working, and negotiate a balance between work and undertaking projects and activities that upholster the civic good" (Ibid.). While for Banks these visions of a remoralised future are appealing in view of the broad neglect of utopian thinking in the mainstream of critical social science, in criticising the analyses of Beck, Gorz and Harvey and his own imaginations, he notes:

> Buoyed by their creative spirit, but aware of my own imaginative shortcomings, my remaining intention is simply to address how far existing economies may *already contain* diverse examples of the progressive (utopian) interplay of economic and non-economic moral values in the contexts of cultural work. This has utility in so far as while Gorz, Beck and Harvey identify the progressive possibility of new combinations of workplace heteronomy-autonomy, their analyses fail to reflect on the existence of already non-capitalist work under existing conditions of modernization. (170)

By assessing ways in which current forms of cultural production already involve possibilities of remoralised futures striving for utopias beyond capitalism, Banks discusses various economising efforts and strategies of cultural work. As he points out, these are nowadays characterised by seriously-minded anti-capitalist virtues such as bartering, the creation of art currencies, digital gift economies (for which file-sharing is an example), or the "bedroom culture" of music producers, digital artists, film-makers etc. (171-78). In reasoning how far such utopian initiatives provide new models of social exchange that could have an impact on the mainstream capitalist economy, he writes:

> First, alternative currencies and the bartering or gifting of art and cultural goods remain marginal forms of economising, and ones that (as yet) appear ill-equipped to serve the more substantial and complex social needs of community members. Indeed, it is notable that despite radical intent, proponents of alternative economies often remain dependent upon the mainstream capitalistic economy for a whole variety of resources—ones as yet unobtainable within a non-capitalist economic framework. For example (...) artists themselves often rely upon conventional "second" jobs in order to survive. Additionally, the production of alternative currencies may well rely upon resources obtained through fiat money purchases or conventional systems of commodity exchange. (179)

[130] In *Critique of Economic Reason* (1989), Gorz outlines the crisis of the work ethic in summarising the "crisis of work". He writes: "In actual fact the work ethic has become obsolete. It is no longer true that producing more means working more, or that producing more will lead to a better way of life. The connection between *more* and *better* has been broken; our needs for many products and services are already more than adequately met, and many of our as-yet-unsatisfied needs will be met not by producing *more*, but by producing *differently*, producing *other things*, or even producing *less*. This is especially true as regards our needs for air, water, space, silence, beauty, time and human contact" (220).

While Banks has reservations as to what extent such initiatives generate new models of social exchange that may reach out beyond the world of art, he points out that these experiments seem to work only in communities in which they were created (Ibid.) by acknowledging, however, the possibility of perhaps unremarked benefits and future social impacts. In his conclusions, Banks draws on a variety of insights such as the prospective emergence of more "fluid, social, informational and technological structures" supporting the "democratization" of cultural production (186) as "creative and aesthetic 'unruliness'" become "more likely to occur *outside* of the direct corporate context" (Ibid.). Yet, in arguing that there are only minor possibilities for the endeavours of progressive cultural workers to build their own "miniature democracies" to succeed, Banks questions the possibility that such efforts will bring about "some *collective* vision that can progressively transform the character of economic life" (Ibid.). In an assessment of the prospects of cultural production and the relationship between art and commerce, as outlined in the case studies of *Manufactured Landscapes* and *Fairytale*, he concludes:

> [I]n whichever way the art-commerce relation is being reshaped and reconfigured, the notion that cultural workers are merely the servile and alienated victims of global capital or, alternatively, self-governing agents of "network sociality" is, to put it bluntly, a fundamentally problematic one given the diversity of business models and identity positions that now circulate within the certainly precarious—but also more open and reflexive—cultural production field. (185)

To summarise, and in an attempt to comment on the prospects of post-capitalist cultural work, a variety of substantial issues and basic questions concerning the possibilites of non-capitalist work and utopias beyond capitalism have been raised and discussed. The all-pervasive and omnipresent culture of the capitalist world-economy poses a major challenge to these utopian initiatives and collectively-shared visions calling for a change in the character of economic life. Furthermore, the culture of instrumentalism, according to different authors, impacts the moral foundations of human identity, engagement and sociability in problematic ways. What are the consequences of this development? Is it possible to retool societies in ethical terms, as suggested by Beck and Gorz, and to perhaps create a more balanced interplay of economic and non-economic moral values in the cultural workplace? What does it mean to *reshape* and *reconfigure* the art-commerce relation under the present hegemonic capitalist social conditions, under which greed and production-oriented behaviour have led to what Ximena Dávila and Humberto Maturana call the "blind expansion of entrepreneurship" (2008:201)? I consider these questions by venturing into the concepts of the common and biopolitical production which Hardt and Negri have explored in *Commonwealth* (2009) and *Empire* (2000). In clarifying Foucault's notion of biopower, their analyses offer forms and possibilities of resistance and thus provide an anchor for rethinking cultural work and knowledge in a time in which many agree that our economic system has become dysfunctional and the search for deeply human solutions has become centrally important.

3.4 Cultural Work and Biopolitical Production

While my analysis in this section is intended to provide insights into the biopolitical scope of cultural work, it is my aim to disclose how cultural work as a productive practise in constituting and (re)creating social realities, meanings, and new objects as well as defining collective and political functions of knowledge can contribute to what Hardt and Negri have conceived as the philosophically-inspired notion of the (social) *accumulation* of the common (2009:283). According to Hardt and Negri, there are three major trends in the current transformation of labour: the hegemony/prevalence of "immaterial production" in the processes of capitalist valorization (Ibid.:132), the technical composition of labour in the feminization of work (133), and the technical composition of labour as a result of new patterns of migration and processes of social and racial mixture (134). In order to provide an understanding of the biopolitical turn of the economy and to develop prospects for biopolitical production as a useful perspective for cultural work practises, I initially consider Hardt and Negri's emphasis on the importance of immaterial production in the transformation of labour. They write:

> Images, information, knowledge affects, codes, and social relationships, for example, are coming to outweigh material commodities or the material aspects of commodities in the capitalist valorization process. This means, of course, not that the production of material goods, such as automobiles and steel, is disappearing or even declining in quantity but rather that their value is increasingly dependent on and subordinated to immaterial factors and goods. The forms of labor that produce these immaterial factors and goods (or the immaterial aspects of material goods) can be called colloquially the labor of the head and heart, including forms of service work, affective labor, and cognitive labor, although we should not be misled by these conventional synecdoches: cognitive and affective labor is not isolated to specific organs but engages the entire body and mind together. Even when the products are immaterial, in other words, the act of producing remains both corporeal and intellectual. What is common to these different forms of labor, once we abstract from their concrete differences, is best expressed by their biopolitical character. (132)

In an attempt to interpret Foucault's concept of biopower, Hardt and Negri point out that Foucault's attention is focused "primarily on the power over life" and the power to "administer and produce life—that functions through the government of populations, managing their health, reproductive capacities, and so forth" (57). They acknowledge at the same time that there is always a "minor current that insists on life as resistance, an other power of life that strives toward an alternative existence" (Ibid.). According to Hardt and Negri, it is important not to miss this central issue of Foucault's notion of biopolitics, which lies beyond a purely philological analysis of his texts. They write:

> [Foucault's] analyses of biopower are aimed not merely at an empirical description of how power works for and through subjects but also at the potential for the production of alternative subjectivities, thus designating a distinction between qualitatively different forms of power. (...) When one defines the exercise of power as a mode of action upon the actions of others, when

> one characterises these actions by the government of men by other men—in the broadest sense of the term—one includes an important element: freedom. (...) Biopolitics appears in this light as an event, or really, as a tightly woven fabric of events of freedom. (59)

In thus seeing the *biopolitical event* as an act of resistance, innovation and freedom which constitutes the production of life (61), for Hardt and Negri the biopolitical turn of the economy is based on an understanding of "living beings as fixed capital" at the center of this transformation as the production of forms of life becomes "the basis of added value" (132). According to Hardt and Negri this is a process of the work of the head and heart in which human faculties, competences, and knowledges are put to work (Ibid.), and what is *produced* (the object) thus becomes a genuine subject. They write:

> One distinctive feature of the work of the head and heart, then, is that paradoxically the *object* of production is really *a subject*, defined, for example, by a social relationship or a form of life. (133)

Now, as I try to discover the biopolitical scope and potentials of cultural work and how cultural work could contribute to the (social) accumulation of the common, the problem which must be included in these reflections is the strained relations and tensions between economic/capitalist production and *culture*. In the light of the current incursions of marketization and commodification which are inseparably connected to capitalism's principle of unlimited accumulation and limitless economic growth at the expense of other values, the issue of "the market" vs. "culture" is a fundamentally challenging one. Despite the fact that "art" and "culture" have frequently protested against and resisted the principle of economic accumulation, they have become a commodity increasingly subject to the rules of capital (cf. Horkheimer and Adorno).[131] The central question here is whether it is possible under the present circumstances of the "totalising" hegemony of economic thought and capitalist social relations, as Banks argues (2007:157), to link cultural labour to the social scope of biopolitical production and biopower, as a form of power which, according to Hardt and Negri, "regulates social life from its interior, following it, interpreting it, absorbing it, and rearticulating it" (2000:23-24). In pointing to the significance of biopolitical production from the perspective of the common, which, according to Hardt and Negri, we all share and participate in (2009:viii), and thus emphasising the importance of the process of creativity to institute a shared common wealth (Ibid.:xiv), they write:

> Accumulation of the common means not so much that we have more ideas, more images, more affects, and so forth but, more important, that our powers and senses increase: our powers to think, to feel, to see, to relate to one another, to love. In terms closer to those of economics, then, this growth involves both an increasing stock of the common accessible in society and also an increased productive capacity based on the common. One of the facts that make us rethink such concepts of political economy in social terms is that biopolitical pro-

[131] The market of "cultural commodities" has a long history and "artists" have indeed long been familiar with it. Christel Raussmüller Sauer, a German art historian and vice-president of the Raussmüller collection in reflecting on this observation adds: "Interest in art as a commodity is old. What is new is the extent to which it has increased over recent decades. The network of structures and institutions that supports the market value of art has reached an unprecedented density since the 1980s" (2003:19).

> duction is not constrained by the logic of scarcity. It has the unique characteristic that it does not destroy or diminish the raw materials from which it produces wealth. *Biopolitical production puts bios to work without consuming it.* Furthermore its product is not exclusive. When I share an idea or image with you, my capacity to think with it is not lessened; on the contrary, our exchange of ideas and images increases my capacities. And the production of affects, circuits of communication, and modes of cooperation are immediately social and shared. (283-84)

With regard to the economy's becoming biopolitical, Hardt and Negri claim that industry must "integrate ever more centrally communicative networks, intellectual and cultural circuits, the production of images and affects (...)" (286). While for Hardt and Negri the accumulation of the common is an essentially cognitive and socially-shared activity that puts life (bios) to work without destroying it, the proposed immaterial scope and social virtues of biopolitical production raise questions regarding the prospects of what we can call the *biopolitical space of cultural work* in which cultural labour could play an active role in cultivating, exercising and performing forms of resistance, innovation and freedom within the wider (global) context of economic life and capitalist production. In a conversation with Antonio Negri, Constantin Petcou[132] circumscribes the biopolitical space as a space for a moderate local activism arguing for the possibility to *oppose* matters of individual concern such as consumerism etc. According to Petcou:

> We are talking here about political struggles on [sic] global scale, that are interesting to us but less to those who live in [sic] hustle and bustle of everyday life, those who fit into a life pattern imposed on them by others. When we refer to biopolitical space, we are referring to a [sic] small-scale biopolitical spaces where "ordinary" inhabitants can meet and reshape everyday life. (...) With our work, we are exploring an everyday, "soft", or "weak" activism that everybody can put into practice, opposition to anything from consumerism to unpopular local planning projects, to which activists (in the strong sense of the word), who are more interested in global problems, aren't committed. (Negri, T., Petcou, C., Petrescou, D., Querrien, A. 2007, no pagination)

In sum, throughout this thesis the emphasis has been on a particular kind of creative and globally-oriented cultural labour process. The biopolitical features of this process addressed in this section raise questions about possibilities/forms of resistance, innovation and freedom in producing alternative subjectivities and existence. While it is possible to conceive cultural work as a form of affective and cognitive labour of the head and heart, the prospective biopolitical process underlying it can be seen as rooted in an intellectual activity through which human endeavours and ecological/evolutionary processes, competences and knowledges about life are put to work and into practice. Thus, in seeing post-industrial cultural work as a type of *knowledge work* that could convincingly address and promote valuable, "reflexive", epistemological and ethical concerns, I (re)emphasise the signi-

[132] Petcou is an architect whose work focuses on the intersection between architecture, urbanism and semiotics. He has published widely in France, Japan, Romania, Spain, the UK and the US. See <http://www.eurozine.com/authors/petcou.html> downloaded 4 June 2010.

ficance of our immaterial discourses, imaginations[133] and images, and the emotional and social dimensions of our relationships, which, according to Hardt and Negri, are *greater* than the material commodities or the material aspects of commodities in the capitalist valorization process (2009:132). Yet, while industrial capitalism has perhaps abolished any kind of critical or authentic culture (Horkheimer and Adorno 1947), it remains an ongoing question whether Negri's prospective experimental, "interstitial" and biopolitical space (Negri, T., Petcou, C., Petrescou, D., Querrien, A. 2007, no pagination) might serve as a social and epistemological space in which cultural work practices can progressively amplify knowledge or nourish forms of resistance against power and acts of freedom in the face of power.

3.5 Conclusions

With the aim in mind of addressing rudimentary questions regarding the future of post-industrial cultural work and knowledge and envisaging improvements in the sociosphere, this chapter has addressed a number of central and challenging themes. In an attempt to communicate the essence of what I have conceived of as compelling insights into the problem of (self-)reflexivity, genuine contingency, non-knowledge and alien rationalities as a methodological challenge to generate civic dialogues in humanities- and arts-based projects, the wider focus of my explorations has included reflections on the ambivalences and indeterminateness of risk modernity, the reductionist and exclusive functioning of existing science and governance cultures, the rather unauspicious prospects of post-capitalist cultural work, and the biopolitical, cognitive and moral scope of cultural work that touches on the qualities of the common. In order to convey what may serve to establish processes of linking the concerns of the humanities and the arts with civic dialogues in different ways, this chapter has further offered insights into the needs for pluralistic discussions and open-endedness, non-instrumental values and experimental conditions, cultural imagination and transformation, and different learning and unlearning perspectives based on the reflexivity, awareness and public understanding of the issues raised.

With the aim of contributing to the larger debate of institutional and civic dialogue between the humanities, arts and the public, *Animating Democracy,* a programme of *American for the Arts*,[134] published a series of case studies concerned with the arts and civic engagement, dialogue and activism. In featuring various projects that demonstrate how cultural institutions have functioned as forums for civic dialogue, the case studies highlight approaches to curatorial practice, interpretation, and education prompted by civic intention. While a major theme of my research is the rethinking of what I have recurrently referred to as the societal function, cultural potential and educational reach of (techno-)socio-cultural spaces of knowledge, the forays of these case studies into civic dialogue provide both a

[133] Imaginations, according to Felt, Wynne et al., shape the material structures and forms in which publics are able to express themselves and thus construct the very publics to whom policy makers are supposed to be listening (2007:53).

[134] See <http://www.artsusa.org/animatingdemocracy/reading_room/reading_004.asp> downloaded 18 June 2010.

contrasting and thought-provoking debate on issues associated with the practices and forms of social learning and cultural change. The studies focus on the public stance of community issues such as new developments in the science of genomics, water as a critical life force, and racial politics etc.[135] In her conclusions in the *Without Sanctuary* Project,[136] Jessica Gogan addresses the methodological challenges of civic dialogue-making and points to the role of the museum as an institutional and dialogic space between the private and the public. She writes:

> Much of the dialogue generated by this project was, for the most part, unstructured. Yet, any review of responses suggests that people are clearly dealing with the civic as they grapple with the ideas and issues evoked by the imagery, and with being human and a citizen in contemporary society. Public institutions may play their most significant role in society's civic life by using their public position to encourage self-inquiry at the most personal level. As we strive toward civic engagement, we are perhaps at our best when we function as a public space for private reflections that are in turn made public. To affect this engaged social space we draw on a rich mix of creative, dialogic, and civic practices. The museum as artist embraces multiple new roles—provocateur, catalyst, creative producer, and facilitator—coupled with the traditional ones of educating and researching, documenting, preserving, collecting, and interpreting material culture. It is not *either/or* but rather *both/and*. (2002:32)

While Gogan's plea for a dialogic museum—a forum to "foreground multiple perspectives and reflect life in its complexity"—emphasises the museum's capacity to open up to "multiple voices" in trying to make meaning of "art and society *together with* (...) audiences" (Ibid.), Roy Ascott criticises the museum as a "one-way system of validating and valorising" (2006:108) and laments that the world has become disneyficated as "Mickey Mouse has taken world leadership in conserving the archeology of urban culture" (Ibid.:107).[137] As a consequence and in pointing to the suggested activity of theme parks and "wholesale participation in the creation of meanings" (108), he emphasises the need to "re-plough and reseed the ecology with new metaphors and hypotheses" by arguing that "museums have been not so much concerned with viewing as with viewpoints" (Ibid.). According to Ascott:

> Insofar as art has been concerned with meaning (and there is surely little else it has ever been

[135] These case studies include: *Through Gene(sis): Contemporary Art Explores Human Genomics,* Henry Art Gallery (Stern 2002); *The Water Project Case Study: Northern Lakes Center for the Arts* (Yuen 2002); *The Warhol—Museum as Artist: Creative, Dialogic & Civic Practice* (The *Without Sanctuary* Project) (Gogan 2002).

[136] The *Without Sanctuary* Project was presented by *The Andy Warhol Museum* in Pittsburgh in 2001/2002 and utilised historical photographic documentation of lynching throughout the US as a springboard to address issues of race, bias, and bigotry. See <http://www.warhol.org> and <http://www.withoutsanctuary.org> downloaded 18 June 2010.

[137] In pointing to the art market's impact on the more entertainment-oriented strategies that museums and art galleries increasingly pursue, Raussmüller's observations and moral indignations appear to confirm Ascott's criticism of the museum: "The wide palette of art on offer is introduced and presented by an immense number of international galleries, art markets, auctions and exhibitions, accompanied by a profusion of publications, as well as—and this is new—by art museums. Owing to their topicality and entertainment-orientated ideology, many museums have relaxed their adherence to their traditional function of critical examination, assessment and introduction of artistic achievements in favour of a new audience- and donor-orientated self-image influenced by the conditions of the art market. (...) The fact that they are more interested in the decorative and entertaining aspects of art than in the confrontation with complex subject matter is only to be expected, but it does not excuse the extent of the preparedness of art dealers to participate in event programmes and populist exhibitions" (2003:19).

> concerned with since beauty and ornamentation have never been semantically innocent, value-free or without significant form—every canvas, mural and architectural feature being soaked in semiosis), and insofar as the museums have housed art, they have been veritable "maisons closes" of metaphor, keeping the best, most shapely, most intelligent and seductive metaphors and meanings, for our delight". (Ibid.)

Gogan's suggestions and ideas about the diverse and inventive roles which the museum as a major cultural institution could play in nourishing possibilities of (self-)reflexivity centred around individual experience, and Ascott's epistemologically-grounded quest for new metaphors, "gardens of hypotheses" and "knowledge landscapes" (111), call the traditional curriculum of the museum into question. More precisely, these authors respond to the nature of the present crisis of knowledge production in the humanities and culture as they raise important questions concerning the role, governance and connotations of dialogue in cultural institutions. Gogan's and Ascott's critical stances point to the significance of greater reflexivity and the necessity to provide different learning opportunities through the establishment of public (techno-)socio-cultural spaces of knowledge and alternative cultural work. Now, while *cultural work* in constructing these spaces is increasingly challenged by the massification and instrumentalism of knowledge and education, which are centred around the keywords of "relevance, aptitudes, problem-solving, and entrepreneurialism", as Jill Blackmore[138] avers (2001:355), the educational perspective of cultural institutions and the practices of knowledge production performed by them are further challenged by a range of social forces. Impacted by the economics of globalization (as we have seen) and dependent on what Blackmore refers to as the "epistemological confusion of postmodernism" (Ibid.), many of the problems which are intrinsically connected to the governance and aims of post-industrial cultural work, must, I wish to argue, be subjected to efforts of what I would colloquially call "re-engineering". While the issues associated with the knowledge to be required and conveyed are embedded in a multitude of educational, political, epistemological and ethical questions which are challenged by the ambivalences of risk modernity, ecological dilemmas and the political uncertainty of an unpredictable world, they are at the same time intimately linked to practices of engagement by which space is constituted (Massey 2005). These issues will be explored in greater detail in chapter 4.

[138] Jill Blackmore is a researcher specialising in feminist perspectives in educational leadership and management, reform and occupational change, and gender equity.

4. Epistemology of Post-Industrial Cultural Work

> If space is genuinely the sphere of multiplicity, if it is a realm of multiple trajectories, then there will be multiplicities too of imaginations, theorisations, understandings, meanings. (Massey 2005:89)

The aim of this chapter is to sketch out a vision of an alternative future for post-industrial cultural work in the "politics of the present" and to discuss the possibilities of a different ontological, epistemological and political status for cultural work and *knowledge*. Based on the broad, cross-cutting approach of this dissertation, the heterogeneity and variety of the three humanities- and arts-based civic dialogue projects have attempted to sensitise the reader to the complexity of post-industrial knowledge in cultural production and cultural settings. The issue is the postulation of a social and democratic space from which science, technology, objects, projects, things and the nature of the finite world which we inhabit can be mentally cultivated and nurtured by suggesting the need for different frameworks which could provide the foundations for new forms of cultural work, dialogue and social action. The substance, meaning and implications of the issue will be discussed in this chapter from various angles. Besides addressing the problems post-industrial knowledge faces regarding rationality, reflexi-

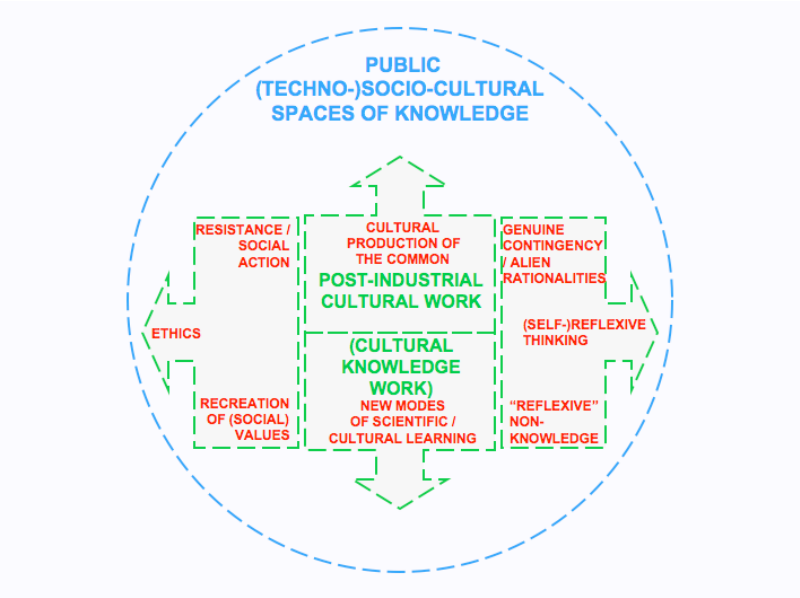


Figure 4.1

vity and contingency, it will also analyse the realities of the power of the market and risk modernity (cf. Banks 2007; Beck 2009) that must be included in the discussion of the implications for the

epistemological scope of cultural work and the treatment of governance challenges. As we can see in Figure 4.1, *post-industrial cultural work (cultural knowledge work)* and the *public (techno-)socio-cultural spaces of knowledge* face a range of conceptual and work-based challenges such as the production/accumulation of the common (Hardt and Negri 2009), the quest for different modes of scientific/cultural learning and authentic contingency (Felt, Wynne et al. 2007), (self-)reflexive thinking (Banks 2007; Beck 2009), the identification and articulation of our non-knowledge (Beck 2009), resistance/social action (Hardt and Negri 2000; 2009), and the (re)establishment of (moral, ethical, cultural, non-instrumental etc.) values (Banks 2007).

Spatial Practice and the Multiplicity of Knowledge Trajectories

This thesis has developed arguments for and offered insights into the need for pluralistic discussions, different imaginations, theorisations, metaphors, and new modes of scientific and cultural learning based on the reflexivity, awareness and public understanding of the issues raised. My search for alternative cultural practices in constructing (techno-)socio-cultural spaces of knowledge is framed by the intrinsically spatial characteristics of all earthly/worldly phenomena which I conceive of as rooted in the environment, space and place. Having emphasised throughout my text the link between (techno-)-socio-cultural spaces and cultural work as a mode of production and intellectual work, I understand Henri Lefebvre's concept of "spatial practice" as a (mental) projection onto a "(spatial) field of all aspects, elements and moments of social practice" (1974; 2009:8) which raises questions regarding the reconceptualization of knowledge spaces as "mental" places. Arguing that the modern field of inquiry called epistemology has adopted the notion and status of space as a "mental place" (3), Lefebvre points to the many heterogeneous and specialised spaces which we inhabit:

> We are (...) confronted by an indefinite multitude of spaces, each one piled upon, or perhaps contained within, the next: geographical, economic, demographic, sociological, ecological, political, commercial, national, continental, global. (8)

Might it not be possible then, I wish to ask at this point, to conceptualise the kinds of potential trajectories which knowledge could encompass in the human space as "spatial practice" since we, as individuals and members of society, require this knowledge in order to convey concerns differently in humanities- and arts-based dialogues (as argued in chapter 3)? In problematising cultural work and the contingency of our experience and knowledge, my subsequent questions are framed by the possibilities of the "multiplicity of trajectories" which space as an imagined open sphere allows us to conceive of (Massey 2005:119). In thus coming to terms with the prospects of "spatial practice" as a mental projection onto a spatial realm, Massey's notion of space, which presents us with "the social in the widest sense: the challenge of our constitutive interrelatedness; the radical contemporaneity of an ongoing multiplicity of others, human and non-human (...)" (2005:195) entails deliberations of how to address the social, rational, epistemological and political facets of our existence in cultural dialogues through more *participatory* and "embedded" modes of governance, as Felt, Wynne et al. suggest (2007:53). Hence:

- To what sort of educational space/engagement can we aspire in order to amplify civic participation and epistemic interaction in debates and decisions concerning our collectively shared future?

- How should the reviving of individual agency (the knowing required for acting) be addressed in the cultural workplace?

- What solutions are there for humanities- and arts-based civic dialogues in dealing with the dominance of instrumental rationality and negotiating the balance between instrumental and non-instrumental values?

- How can the humanities and the arts in the face of the fallacies of a demoralised politics[139] develop more "embedded" workplace identities instead of positioning themselves more laterally as perplexed and "quizzical commentators", as Gibbons et al. argue (1994:110)?

In an attempt to find answers to these questions, I will draw on insights and issues raised in both chapter 2.3 *Preliminary Taxonomy of Post-Industrial "Cultural Knowledge Work"* and chapter 3 *Rethinking Post-Industrial Cultural Work and Cultural Spaces of Knowledge*.

A Different Epistemological Terrain for Cultural Work

While, as I have argued, the conceptualization of so-called "third" spaces of knowledge in which different forms of knowledge could be combined, cultivated and transmitted, and the practices that define them pose a conceptual challenge, these spaces are intrinsically entangled in our *reasoning* about the world (Turnbull 2000:211). Our thinking and reasoning, as we have seen, is linked to a broad range of practices of knowledge creation and modes of cultural work in generating distinctive dialogue opportunities. If we accept that the cultural production of knowledge and humanities- and arts-based civic dialogue work involved therein has a significant impact on our awareness, consciousness and lives, should we then not—in an attempt to deviate from the current idiosyncrasies of cultural work practice—contemplate the potential of the socio-cognitive processes underlying human knowledge creation and distribution for learning? While these processes are increasingly scaffolded and implemented into the epistemological infrastructures of computer-supported cooperative/collaborative learning (CSCL) environments, knowledge and culture, as Liu argues, are disgraded to issues of "information" and "content" in the service of the global multimedia entertainment industry (2004:1). As a consequence and in order to dodge the pitfalls and inevitable paradoxes in today's omnipresent computing and languaging processes, as Frederick Steier and Jane Jorgenson[140] point out

[139] I refer here again to Colin Powell's (the former US Secretary of State) "infamous talk" about the "unambiguous, and undisputable fact" (Latour 2005:8) of the presence of weapons of mass destruction in Iraq, which he gave at the United Nations Security Council meeting at UN headquarters in New York on 5 February, 2003. See chapter 2.2 *Manufactured Landscapes*—Manufacturing a Cultural Space of Knowledge (Case Study 2) on page 63.

[140] Frederick Steier and Jane Jorgenson are both American researchers and writers. While Steier's research is in the field of organizational learning and action research, Jorgenson's research interests centre on organizational communication and family communication.

(2003:124), I will sketch out a different epistemological terrain for cultural work and cultural production, and ground my deliberations on Heinz von Foerster's socio-epistemological "model" of learning. In relying on Marcelo Pakman's[141] unconventional interpretations of von Foerster's "poetics", my aim is to use Pakman's conceptualization of alternative frames (positions) in ethics, aesthetics, pragmatics and politics (2003:114) as a methodological and epistemological anchor from which to envision possibilities of a different "politics" for cultural work and the "politics" of *cultural knowledge work* in particular (Figure 4.2). I will first introduce Pakman's "organizing elements" (Ibid.) and the general principles which he uses to channel his participation in therapeutic conversations, and then transpose his poetic practice into an epistemological-political "model" for cultural work.

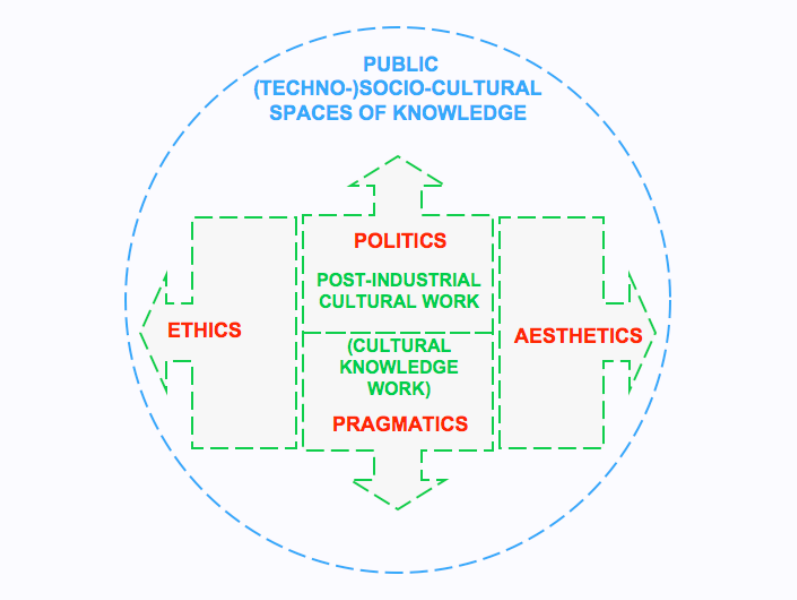


Figure 4.2

4.1 Cultural Work and Second-Orderness

Pakman's pursuits in the therapeutic field build on Donald Schön's (1983) conceptualization of "knowledge-in-action" and von Foersters (1973; 1998) claim that "reality equals community". In using von Foerster's Second-Order Cybernetics—the Cybernetics of Cybernetics accounting for ourselves as *observing systems* (2003:107)—Pakman offers thought-provoking insights into the intrinsic nature of social learning and thus provides a stance from which to reconceptualise cultural work as "reflexive" (observing/interpreting) and social practice. While for Pakman the "reflective turn" in the therapeutic context builds through "reflective conversation the 'theories in use'" (108), the psychotherapist is for him not a "privileged interpreter", but a provider of expert knowledge (expertise) as he introduces reflective strategies in order to "navigate multiple (...) interpretations, embedded in the actions, perceptions (...) that are the matter of social, psychological (...) human life" (111). In reconstructing the

[141] Marcelo Pakman is a community psychiatrist and systemic family therapist who lives in the US.

"poetics" of Pakman's practice in the socio-cultural field and public dialogue-making, it is important to understand that his practice emerges from reflexive conversations about actual therapeutic situations. Thus, the identified "patterns of action" described by Pakman and by others as observers of his work (113) lead to second-orderness, that is: our observations and understandings which moderate our actions. According to Pakman:

> This poetics works as an implicit articulated series of organizing elements of therapeutic conversations that seem to guide my movements during the sessions. It is made (...) of *theories-in-use*, which are *theories of action*, structured, patterned ways of moving about in certain types of situations in order to achieve certain specific goals (Schön 1983). (...) Poetic elements can (...) be described as an interconnected network of concepts of a level of abstraction close to practice, with more or less identifiable roots in many different sources of learning. The elements for a poetics try, in general, to capture a possible understanding of the understandings that mediate professional actions, of our "knowledge-in-action" (...). (Ibid.)

It is my contention that Pakman's identified positions (frames) of ethics, aesthetics, pragmatics and politics constitute a useful framework of second-orderness that reaches beyond the therapeutic arena by serving as a facilitator for the kinds of inquiries, interpretations/(re)conceptualizations, questions and representations of knowledge cultural work is concerned with. In thus providing a fertile ground for alternative development thinking (as I will show) and the public explorations of educators, designers, social entrepreneurs and *cultural workers* who act as institutional, culturally-driven, economic and political stakeholders in a variety of cultural production fields, Pakman's *modus operandi* helps to access, articulate and understand the complexity and intricacies of our dilemmas and challenges from a second-order perspective. Among these challenges are, as outlined in the previous chapters, the maintenance, political production and dissemination of the common—a matter which is in a state of desperate crisis throughout much of the world—, our non-knowledge and the (global) risk society which impacts us all. In addition, in a crucial and pervasive sense, they also include our ways of preventing ourselves from acknowledging—socially and intellectually—contingencies and ambiguities, or from catalysing the development and provision of alternative knowledge. Exploring Pakman's positions in ethics, aesthetics, pragmatics and politics in the following sections from the socio-epistemological-political horizon of cultural work and cultural dialogue-making, I will sketch out and define the potential of a "poetics" for cultural work based on both von Foerster's ethical and aesthetic imperatives.

4.1.1 Ethics

By drawing on von Foerster's *Ethical Imperative*: "Act always so as to increase the number of choices", Pakman's poetics follow this imperative in articulating both the necessity of choice and human freedom. If we consider the potential of cultural work to devise alternative options for the

governance of science, new procedures for pluralistic discussion and learning in order to address the contingencies and multiplicities of our understandings (Massey 2005:89), we should, I suggest, explore in more detail the possibilities of "multiplying" alternatives envisioned by Pakman (2003:116). Seen from the scope of their choices, these alternatives create opportunities to engage in an open-ended and ethical "conversation with fate", as Pakman suggests (Ibid.). Von Foerster's imperative opens an ethical-epistemological horizon of options as it not only settles ethical and moral trajectories and anticipates the *consequences* of our activities, actions and practices, but moreover, also increases our capacity to respond "effectively and coherently to unpredicted events and findings", as Felt, Wynne et al. suggest (2007:82). While choices appear to be "poor, or merely imposed, or inevitable", the discussion of options, Pakman argues, "tends to open up the possibility of describing different ways in which things (...) could come to actually happen, opening up room for variations and choices within restrictions" (2003:116).

What are the possibilities of our "knowledge-in-action" in different learning and unlearning perspectives? The following wider premediated questions of human purposes and priorities are thought to serve as guidelines for alternative modes of governance of cultural work and cultural dialogue-making: What are the alternatives and different possibilities of creating a public space for dialogue in a given civic issue or planned project (exhibition, conference, film, performance etc.) in an area of great contention? How can the possible alternatives be conceived of as contributions to collective (self-)reflexivity and learning? What other alternatives and possibilities were present at some other point to practise significant (self-)reflexive thinking in cultural production, and governance of science and technology, but for whatever reason, were not followed? (Formats, for example, in which publics in all their "diversity and varying roles are constructed", as Felt, Wynne et al. suggest [2007:53], which includes the "kinds of knowledge, experience and ways of thinking they bring to such engagement processes, invited or uninvited" [Ibid.]).[142] Is there a way to reinstate any of those alternatives as current ones? What are the consequences of alternative interpretations of our instrumental conceptions of what it means to learn something for everyone involved (designers, educators, social entrepreneurs, cultural workers, publics etc.), including recalcitrant publics, in reorienting civic dialogues? How can the alternatives be conceived of as desirable interpretations in themselves to highlight choices, imaginations and possible commitments that could be supportive in developing ideas to counteract problems or current dilemmas? How can we explore the contending options at hand to transform reactions and commitments into constructions of spaces and places for knowledge? How can we make them as explicit as possible in multiplying the details to reshape our normative orientations in collective life? How can we describe and portray them as sensitivities and possible scenarios that address a more impending and stronger anticipating awareness of our collective values and non-knowledge? How could other people (for example other actors, social/cultural entrepreneurs, educators, publics etc.) be involved who see, would see, or would recommend any other alternative to increase the sensitivities for collective practices and experimentation? How can we describe alternatives as explicitly as possible as alternative knowledge trajectories which sustain the connection

[142] In the case of the Gotthard Base Tunnel exhibition alternative formats would stimulate discussion in providing alternative forms of interaction with the technoscientific knowledge that different publics have. These publics, Felt, Wynne et al. point out, "are never simply there, and just in need of being invited to participate, but are constructed and performed through the very process of involving them in one way or the other" (Ibid.).

between mind, heart and life so that they would impact the position of different people or publics, if they should be used as a catalyst for knowledge exchange in a given civic issue?

A Claviature for Different Modes of Knowing

In multiplying alternatives, as we have seen, von Foerster's socio-epistemological and second-order understanding provides a "mental" framework required for cultural work to practise "reflexive" thinking in devising the transient, interdisciplinary, epistemological and political dimensions of cultural projects, reality-negotiations, practices and cultural actions. Furthermore, in recognising the contingent character of knowledge and incorporating it into civic dialogue-making, alternative ecological/socio-economic views and critical vistas on the culture of instrumentalism, cultural work plays as "spatial practice" on the claviature of different modes of knowing and possibilities for *acting.* Thus, Pakman's position of ethics, I suggest, provides a socio-ethical framework for cultural work to recover more degrees of freedom for acting and public engagement.

As the discussion of the biopolitical scope of cultural work and the social accumulation of the common in chapter 3 has shown, the challenge arising here is the (re)creation of a social and collective awareness of community-oriented matters through civic dialogue and cultural work. It is in my view most relevant to acknowledge the importance of cultivating and performing forms of freedom, resistance and innovation (cf. Hardt and Negri 2009) in order to renew social realities or public uptake of science, and in doing so materialise corresponding ecologically- and politically-weighted commitments and action. While, as I have argued, the nature of the world-sized consequences of our problems poses a challenge to *everything*—reflexive thinking, language, the production of images, representation, the dimensions of collective social life—and while we obstruct important routes of learning and unlearning, these issues are altogether deeply encoded in the construction of the knowledge spaces themselves.

4.1.2 Aesthetics

Von Foerster's *Aesthetic Imperative*: "If you desire to see, learn how to act" contains, as Pakman points out, an ethical reach, and by calling for action this imperative confronts us with the problem as to which of the "identified options (...) we choose to *see*, and what (...) we need to learn in order to see them happening" (2003:116). In thus pointing to the need to act in order to "increase the number of choices, and (...) in order to see the preferred choices happen" (117), Pakman states:

> Aesthetics is here ethics as well. It is a choice among choices: the choice of those options we would prefer to see happening. No choice is complete until we aesthetically choose which ones we want to see happening. (...) [E]thics is always pre-announcing aesthetics, because there is a chain of choices leading to what we prefer to see happening, and orienting our actions and the learning we need to go through in order to act efficiently. (Ibid.)

Pakman's position of aesthetics emphasises the need to *see* the options, interpretations and their consequences, and the accentuation is thus on what we can *learn* by making the chosen options happening and turning them into actions. Now, having repeatedly problematised in this thesis the dominating instrumental learning practices in science and governance, and aesthetic idiosyncrasies such as those of *Manufactured Landscapes* which perhaps—though not necessarily intendedly—subvert consciousness and hinder us from *seeing* the world-sized dimensions of the consequences of our acting, these issues raise questions concerning our paying attention to and "channelling" important learning trajectories. In seeking to expose the criteria that make our choices of particular modes of learning and knowledge trajectories preferred ones of what we wish to see, as Pakman avers (Ibid.), and in order to cultivate a desirable "reflexive" awareness that could be beneficial for shaping learning in civic dialogues in which issues of social and community concern are addressed, the following questions feed into the governance challenges of cultural work: What are the criteria that make our choices of particular (techno-)socio-cultural spaces of knowledge preferred ones? What are the deliberations that make them more desirable to *see* a given civic issue, imagination, projection or utopian project based on a particular vision? What are the intentions, aims and strategies that different cultural, social, economic and political actors involved in constructing a public knowledge space use? What are the conflicts that arise when specific options or "solutions" are more desirable according to some values (such as commercial, social, cultural, political ones)? Which are the values, norms or beliefs used as parameters: monetary/economic goals or benefits?, profit orientation?, self-interest?, ethical and moral principles?, social virtues?, collective imagination?, philanthropy?, collaborative and co-operative learning?, core democratic convictions?, ecological-cosmopolitical objectives?

In transposing the two von Foersterian imperatives—ethics and aesthetics—into poetic positions (elements) for cultural work, the questions in the two previous sections have served to sketch out the theoretical framework of an "epistemology" for cultural work understood as a practice, which shapes the (re)creation of new social realities, meanings and objects, and reinvigorates the cultural, political and collective function of knowledge. While, according to Pakman, ethics and aesthetics lead to the position of pragmatics, because when we decide which choices are desirable "we need to learn in order to make these choices happen" (117), in the next section I will explore the pragmatic position of cultural work and governance challenges for action.

4.1.3 Pragmatics

Manufactured Landscapes, as we have seen, used China's industrialization to illustrate the state of our homeplanet, and the impending global ecological and environmental crisis. While the dilemma is linked to both the material hunger of Western consumerism and the pace of China's industrial growth, the "dialogic" commitment of *Manufactured Landscapes*, as I have argued, seems, however, to be at odds with the *late realization* (awareness) of compelling social, economic and ecological evidence which the crisis invokes. Thus, a central problem here is *Manufactured Landscapes'* "reflexive", moral and ethical authority and its relation to complex developments and the recreation of social values with

implications for existing ecological, economic and political realities in particular. Moreover, if we consider Ai Weiwei's methodology in *Fairytale* which—from the perspective of exhibition practices—made a problematic use of aesthetically de-constructive options, or the Gotthard Base Tunnel exhibition's emphasis on instrumental learning and knowledge, these examples raise questions not only with regard to the signification embodied in the cultural production of knowledge, but also concerning the potentials of learning which these options as particular forms of "acting" imply.[143] In this respect and while, as Felt, Wynne et al. point out, the "citizens' side of governance (...) remains underdeveloped" (2007:56), I argue that cultural workers' modes of governance in designing humanities- and arts-based civic dialogues and important "reflexive" learning trajectories concerned with risk dimensions, social/ environmental impact and ethical aspects are particularly significant.

Ethics and aesthetics, as Pakman points out, are intimately interwoven with action as the "heart of pragmatics" (2003:118) and actions are "always embedded in circumstances that give them qualities that would facilitate or restrict further options" (Ibid.). Von Foerster's call for action and *learning to act* can thus be transposed into questions which challenge the intellectual and anthropological strategy of cultural workers, designers, educators, and social or cultural entrepreneurs etc. In conforming to von Foersters aphorism of "reality equals community" and in order to cultivate a wider pragmatic awareness of developments, social/ethical issues and relations that are linked to our ways of seeing, perceiving and understanding the world, the following questions serve as guidelines for learning to act in the cultural workplace: What do cultural workers need to undertake to move toward seeing their preferred options be materialised as (techno-)socio-cultural spaces of knowledge? How do the preferred options impact the spaces to construct and the knowledge to be utilised and transmitted therein? How would cultural workers as socio-economic and ecological actors start to move in the desired direction? What are the missing pieces they would need in order to facilitate moving toward that chosen direction? What are the missing questions they would need to ask in order to facilitate moving toward a selected direction of "knowledge-making" in following a chosen knowledge trajectory? Is starting to move in this direction something that will further augment their options in creating democratic dialogue opportunities? Or would it lead, instead, to perspectives that obstruct important dimensions of dialogue and learning? What are the important learning dimensions in science, culture and society with regard to social impact, risk-governance, human health, equity and equality, social cohesion and global stability that are perhaps obstructed?

The answers to these questions are dependent on a range of social forces and the immanence of power, and are implicated in the reproduction of regimes and the instrumental exercises of social or technical control, and the power of the market in particular (Banks 2007; Felt, Wynne et al. 2007; Hardt and Negri 2009). Furthermore, linked to the social realities of neoliberalism, globalization and modernization, these issues are also intimately connected to today's political atmosphere in which the search for common ground and avenues of renconciliation have never seemed more urgent. This brings us to the core question of this thesis: the potentials of cultural work as a democratic practice

[143] While bearing in mind that acting responsibly has to take into account the fundamental "perceptual dilemma" of the "vast, blind spot" that we all share, as von Foerster (1973; 1998) and Goleman (2008) claim, I wish to reiterate that our collective efforts on public engagement, participation and governance always contain the possibility of pursuing selected options to the exclusion of others so that we run the risk of intellectually precluding ambiguities, contingencies, uncertainties and potential wider imaginations.

and powerful mediator and arbitrator in the business of grasping and recreating today's socio-economic-political reality in which our individual and collective lives are embedded (cf. McCarthy 1996).

4.1.4 Politics

For Pakman, ethics, aesthetics and pragmatics are closely linked to "micro-politics" (2003:119). In conceptualising *micro-politics* as an "attempt at both making explicit the context in which ethics, aesthetics, and pragmatics occurs, and operating on it in order to make [the] poetic elements more effective" (Ibid.), Pakman sees ethics, aesthetics and pragmatics "formatted by political forces" as they emerge in communal "processes of negotiation and regulation of power" (Ibid.). He writes:

> The realities in which we live are communally made through goals that imply regulatory processes established in communication. Communal goals are the hallmark of communicative process [sic] or regulation. I will claim that what we can call legitimately politics is a process of regulation that allow [sic] the emergence of communal goals in order to construct the realities in which we live. Politics is, then, the negotiation and regulation of spaces of power. For power means the ability of social actors to maintain or create definitions of reality for themselves and others. (...) Those definitions are combinations of both symbolic (effective mostly through the presence of representation) and action-field events (effective mostly through their presence, whose meaning is mediated by representation) which enforce limits to the symbolic or living spaces of others. (Ibid.)

In emphasising the importance of our micro-political operations and acting, Pakman further points out that the choice to "embody von Foerster's claims about the intricate relationship between reality, community, communication, regulation, goals, and society", relies on questions about "what actions should be initiated, or maintained, or amplified in order to increase the chances (...) to make desirable options happen" (118). Now, while cultural work is linked to institutionalised commitments and larger societal/political priorities, and embedded in collective (technoscientific) imaginations and economically-driven stakes and pursuits (such as those underlying the construction of the Gotthard Base Tunnel, for example), it is shaped by both the "politics of the present" and the power-knowledge relations of the economy in particular, while it is at the same time subjected to the regime and policy rules of "cultural politics". The critical questions here are: What is "politics" in cultural work under these circumstances? What is "politics" in order to move toward alternative "desired options" and increase the chances to make them happen? At what level should cultural workers be acting in this regard in order to define and represent reality in (techno-)socio-cultural knowledge spaces, and engage citizens in "reflexive" thinking and dialogue? Who should be involved in these processes that entail knowledge and public information about the sustainability of society as a whole? With whom should cultural workers be interacting to sustain culture and society in constructive ways? Whose forces should be in-

cluded to make cultural work more effective (politically), and the chosen options to change in the desired direction?

It is my contention that Pakman's conceptualization of micro-politics and the corresponding micro-political operations provide an exploitable stance which—beyond the therapeutic field—helps to reflect on and rethink current modes of governance of cultural work including numerous unquestioned practices conducted under habits and routines in the cultural workplace. In order to sketch out a different *politics* for cultural work, and negotiate and regulate alternative (micro-)spaces of knowledge, the key questions therefore are: To what (micro-)political position can cultural work aspire in order to respond democratically to the prevalent political frameworks, social regulations and regimes of power and control? What (micro-)political strategies should cultural workers pursue to create social and epistemological spaces in which their practices can progressively and pluralistically amplify knowledge and resist power and control (cf. Hardt and Negri 2009)? Pakman's understanding of micro-politics is rooted in a *poetics* defined as "constructive practice of the contexts and the competence to act socially, to reflectively review the context in which interpretive practices happen, are born, promoted or maintained" (111). Thus, micro-politics, he argues, should be practised and "taught together with the other elements of the poetics" since in practice they function as a "continuum of 'knowledge-in-action'" (119). According to Pakman:

> But in no way I want to suggest these elements [ethics, aesthetics, pragmatics, and politics] follow a chronological one way order. They operate as a network and we move constantly at any given moment, but we move freely looking for more options, exploring their desirability, strategizing actions to make them happen, and operating micro-politically. This micro-political operation includes both making explicit the contexts for the [sic] appearance as choices, their desirability and the alternative actions to make them happen, and the ways to operate on those factors. Political analysis and action can make some options more desirable, or allow [sic] to imagine new actions. Pragmatic considerations, when actually explore [sic] and put to practice, can facilitate the emergence of new options or, again, make some of them more or less desirable; or change the politics of forces at play. (119-20)

Now, if we conceptualise ethics, aesthetics, pragmatics and politics as poetic and unchronological constituents (elements) of an epistemological-political "model" for cultural work and acting, the issue in question is whether cultural work could indeed develop or perform more open, social, reflexive, educational and less marginal capacities/potentials in cultural environments. While I have suggested in this chapter that these elements play a role in structuring and heightening the reflexivity, competence and re(creative) potential of cultural labour, the question remains whether cultural work in the age of information, corporate knowledge work, and the ruling rationalities and instrumental values in the global market culture will be able to acquire a foothold in a knowledge space different from the one in which it finds itself placed in the present activities of the capitalist cultural industries. Additionally, these issues are connected to the question whether cultural work, as Banks maintains, could "obtain a foothold sufficient to effect widespread or radical social and economic change" (2007:155). While thus far my concerns have been with exploring cultural work in civic contexts of

knowledge production in the humanities and the arts, and cultural dialogue-making as an institutionalised commitment in the field of politics and the economy, I have studied cultural work as a community-oriented affair related to issues of public participation, collective imagination and social learning. In the next section, I examine how Pakman's three additional poetic elements of *language*, *reflexivity* and *temporality* may fit into post-industrial cultural work practice (Figure 4.3). In Pakman's poetics, language, reflexivity and temporality play the role of elementary *tools* by which the "actual conversation" (120) is steered and realities are constructed, defined and performed.

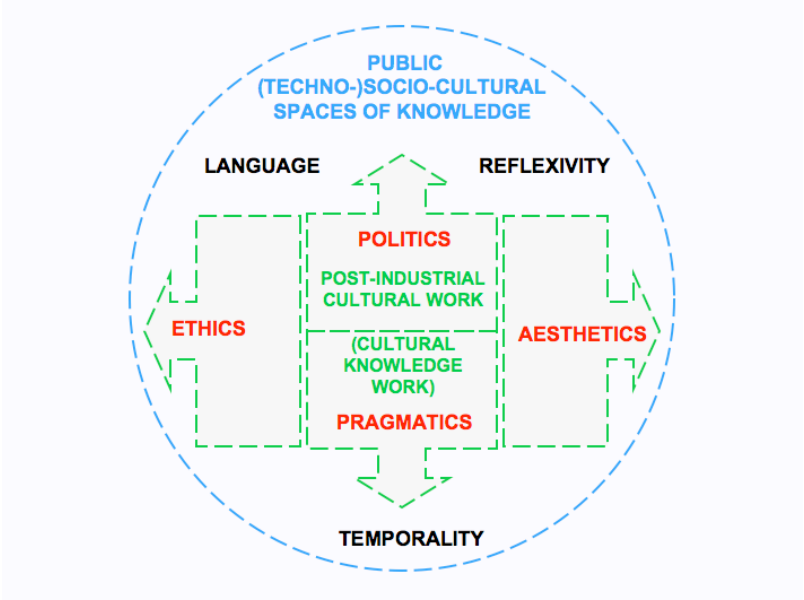


Figure 4.3

4.1.5 Language

The overall focus of this thesis is on the cultural production of heterogeneous humanities- and arts-based knowledges passed on by material and metaphorical "languages", hybrid cultural claims, mediations, cultural images and multiple visual strategies which are exercised, as we have seen, in more arbitrary spaces for political production. *Language* which, according to Latour (1993; 1999a), embodies the practices of discourse, mediation, translation, delegation and representation constitutes an essential element of the four "guarantees" of the modern (and the non-modern) constitution made up further by the subject, the object and our being. Having ventured in this thesis into the "languages" and the "content" by which knowledge is culturally conveyed, these "languages" are a pivotal element in the cultural labour process as they transform and stabilise knowledges in constant flux. In highlighting the significance of the *participatory* features of language and drawing on von Foerster's insight that we as human beings *belong* to this world and are as observers an intrinsic part of it (Pakman 2003:120; von Foerster 1984), Pakman considers participatory language to be "congruent with an ethical, aesthetic, pragmatic, and political stance" (Ibid.). He writes:

> We invent choices we are responsible for; we choose the options we find more desirable; we design actions to make our choices happen; and we try to operate at a micro-political level to make choices, and to initiate the actions to make them happen. (...) We do (...) things from within the systems in which we find ourselves operating or we design in order to operate. And we do it always using a language that captures this constant speaking as a part of the world we describe, design, suffer, enjoy, and act upon. (Ibid.)

Pakman's participatory language functions as a tool and entails responsibility and transparency. While he emphasises the relevance of participatory language as a communicative and poetic element in "a conversation in terms of inclusion", "searches for the constructed origin of realities", and the "questioning [of] authority and universality" (Ibid.), Felt, Wynne et al. problematise our striving for more participation and communication as a recent phenomenon which has arisen in the early 21st century (2007:60). They argue that *more* participation or communication, which appear to be oriented towards more consensus-oriented goals at the core, are not a solution to public alienation and unease with science, innovation and governance, and write:

> [T]he idea that consensus is central to participatory exercises—as expressed in consensus conferences—should be rejected. Indeed we should ask why consensus should be a better input for policy making than identifying the central areas where authentic disagreement, or even dislocation remain. In that sense dissent should not be understood as a failure but rather as a vital form of keeping public engagement (...) authentically alive and not under the control of agents whose own culturally embedded assumptions, imaginations and practices may well be part of the problem. (Ibid.:61)

From the perspective of the civic dialogue projects which this thesis has investigated and in view of the instrumental and reductionist functioning of governance culture itself, the issue in question is how post-industrial cultural work in contributing to a finer sense of possibility could engage in promoting authentic ways of building lively dialogues about matters of collective concern. Cultural work, as we have seen, is linked to strong dialogic engagements and public commitments. As a consequence and by incorporating dialogic forms of opposition, non-agreement or dissent into actual cultural work practice, new explorative forms of communication, discourses and idioms could be developed and used as a strategy to (re)shape learning trajectories based on a collectively shared socio-cognitive, accountable and epistemological-political awareness that is urgently needed today. Additionally, cultural work—understood as a community-oriented affair—can support those requested features which Gogan has conceived of as the central assignments of the museum: provocative, catalysing and facilitating forms and new qualities of creative thinking of no "*either/or*", but a rather definite "*both/and*" (2002:32). In thus promoting more inclusive types of public conversations and more "embedded" modes of cultural work governance, the many questions that I have formulated in my quest for an ethical, aesthetic, pragmatic and political stance of cultural work practice feed into the challenge of how to implement collective sensitivity and alternative forms of reflexivity (Haraway 1997:37) in civic dialogues. While our "reflexive" and "critical" forms of thinking are linked to our ways

of reasoning about the world, and rationality, non-knowledge, contingencies, ambivalences, ethics, and ecological awareness tacitly shape the social imaginaries and alternative trajectories of cultural learning, these issues confront us with the need to seriously think about the question of what cultural work can accomplish with regard to the establishment of *(self-)reflexive* (techno-)socio-cultural spaces of knowledge.

4.1.6 Reflexivity

While for Pakman *reflexivity* is a social and interactive process in providing a central tool in the poetics of psychotherapeutic practice, participatory language, he argues, is "in itself a way of assuming a reflexive, second order stance" (2003:121). This is so because it is based on von Foerster's second-order understanding which finds itself expressed in the notion of seeing ourselves "through the eyes of the other" (Ibid.; von Foerster 1984). According to Pakman:

> This is reflexivity as a social process, and not as an isolated introspective exercise, which would be necessarily blind to the interactive nature of our actions and the effects of our interventions (...) and languages as they happen in the social contexts in which we find ourselves and help to construct. Increasing alternatives, choosing the more desirable ones, moving toward making them happen, and acting politically to operate more effectively at every step of the process, involves always using those same ethical, aesthetical, pragmatic, and political parameters to see ourselves and invite to see [sic] (...) all those choices and actions. In turn, it is this very reflective stance what [sic] makes all of those poetic elements to be [sic] mobilized into creating more options, choices, and actions. (Ibid.)

While Felt, Wynne et al. emphasise the importance of "(self-)*reflective*" reasoning or "indirect learning, as distinct from instrumental, direct learning alone" (2007:65), *self-reflexivity* holds its own distinctive place as a fundamentally human ability not only to engage in learning, but to reinforce learning experiences, as well. Adair Linn Nagata[144] defines self-reflexivity—for purposes of intercultural communication—as "having an ongoing conversation with one's whole self about what one is experiencing as one is experiencing it" (2004:160). She writes:

> To be self-reflexive is to engage in [a] meta-level of feeling and thought while being in the moment. The strength of being reflexive is that we can make the quality of our relationships better at that time in that encounter (...). (Ibid.:140-41)

Nagata's conceptualization of self-reflexivity is that of a participatory activity (language) which encompasses both personal self-awareness and social/communicative features. Yet, while reflexivity, as Pakman avers, is not exclusively "embodied in participatory language, but gives a stance for

[144] Adair Linn Nagata's work is focused on intercultural communication, self-reflexivity and personal leadership.

language in the making to evolve" (2003:121), reflexivity—understood as a circular relationship and capacity of an individual agent to recognise or respond to forces of socialization—reaches beyond the dimensions of an ongoing *reflexive* conversation with one's whole self about what one is experiencing. As Pakman details, *reflexivity* includes a stance from which to "introduce mutual observation, multi-lateral decision making negotiation, opening to a view of actions (...) and the interpreted quality of every representation" (Ibid.). In transforming thus the possibilities of our "knowledge-in-action" into critical (self-)reflexive learning perspectives which include observation, decision-making, negotiation, interpretation, imagination, responsibility and corresponding acting, the following questions serve again as guidelines for modes of governance of cultural work and civic dialogue-making: What does it mean to nurture and mature diversely creative and recognisable public spaces of knowledge for deliberation? What kind of (techno-)socio-cultural spaces of knowledge are needed to create sustainable, equitable and resilient societies? What spatial structures for knowledge production in cultural production are needed for *good governance* and a "better society", as Welzer suggests (2008:270)? What skills, talents and strategies in which we engage in order to exchange thoughts, feelings, attitudes, and beliefs among people are particularly needed to influence these issues and mobilise other actors? "What kind of progress and knowledge is it that we most need, to deal with the multiple challenges confronting us today?" (Wolbring 2009:159)[145]

Now, if we consider the existential crises associated with climate change and environmental destruction as a challenge to design opportunities for civic dialogue in the cultural workplace, the problem to lament is a lack of discourse around social impact, risk and governance etc., as Wolbring points out (2009:159). Wolbring's assertion here is that we need to ask urgent questions about the kind of abilities we "cherish and for whom they should be available, when, for example, we discuss adaption and mitigation to climate change" (Ibid.). Thus extending this challenge to the needs of "impaired" people and adding that these "possible trajectories force us to tackle some very deeply rooted notions that have significantly shaped our modern societies" (Ibid.), Wolbring confronts us with the particularly critical issue of mobilising and influencing a variety of actors in civil society (Ibid.). These concerns feed into multiple challenges such as of how to articulate the general features of scientific knowledge in public policy and cultural work governance, or how to revive individual agency and knowledge in the cultural workplace. This brings us to Pakman's notion of the "logics of 'becoming'" (2003:122), that is, the *temporality* of becoming which is implemented in his explorations into von Foerster's socio-epistemological "model" of learning based on the alternative positions of ethics, aesthetics, pragmatics and politics.

[145] Gregor Wolbring is a health researcher, futurist and scholar in disability studies, and governance of science and technology. Wolbring's research is primarily focused on ableism ethics and ableism governance. In the framework of science, technology, and governance and democracy, ableism is a challenging issue calling for more public dialogue in civil society about science and technology developments, commercial interests and governmental decision-making.

4.1.7 Temporality

The final focus on temporality serves to conceive of cultural work as a practice invoking epistemic interaction and amplifying civic participation in debates and decisions concerning our collectively shared future in terms of a durational process. Providing the knowledge required for acting and constituting a "participatory quality of language and of reflexive stance" (Pakman 2003:122) entails what Pakman describes as a "fluid of experience (...) and (...) a transformed view of time" (Ibid.:121). He writes:

> The events that make for the experience (...) in the social situations we deal with and we find ourselves, (...) the qualities described and assumed to be constitutive of state [sic] of affairs, and the evaluations made of options and actions, their desirability, and the contexts in which they occur, all are seen from a different perspective when we linguistically replace the verb "to be" with the verb "to become" (...). (121-22)

Von Foerster's (1984) perceived need and proposition to move from an ontology of being toward "becoming" challenges us to bring these insights from an academic field into a practice-based one in which actual cultural work practices take place. By replacing "cultural work" by *cultural knowledge work*, my conclusion here is that in order to ensure sustainable interconnections between art, culture and society, governance needs to be shifted in practices and institutional policy towards interconnecting and combining knowledges, known non-knowledge, methods and antagonisms into new decision-making procedures, as Beck outlines (2009:126). In response, I suggest that we may justly conceive sustainable and constitutive qualities of cultural work and correlating knowledge trajectories as a socio-epistemological system of mutually reinforcing ethical, aesthetic, pragmatic and political convergences and continuities. Thus seeing cultural work as an essentially immaterial activity and in acknowledging both knowledge's contingent character and the *continuity* of distinctions and not oppositions as "dialectical constellations", as Robert Pepperell and Michael Punt[146] suggest (2000:164), we may indeed conceive of "things (distinct perceptions) as being both connected (...) and separated by permeable membranes that exist both in our minds and in reality" (Ibid.). In order to explore more open forms of learning and interactions between cultural work practice and public concerns with a view to more efficient governance, we may need to create mental "frames" for our observing processes, as Steier and Jorgenson point out (2003:129), and which they understand as "observing systems in the form of interconnections and patterns, a crucial first-order recognition" (Ibid.:128). These may allow us to merge first-order understandings with second-order understandings as each of these "frames" makes different interpretations possible of what "is really going on" (129).

[146] Robert Pepperell is a British multimedia artist, musician and academic. Michael Punt is a British film-maker and writer who has published widely on digital media and film history.

4.2 Conclusions

While cybernetics, according to Edward A. Shanken,[147] has become so "entrenched in scientific methodology and social theory alike that many of its underlying principles have come to be taken for granted" and must therefore be seen "as part of larger epistemological transformations" (2003:19), the proposed socio-epistemological-political "model" for cultural work, knowledge production and learning raises questions with regard to the confluence of challenges confronting us. Do cybernetics and second-order cybernetics in particular offer a (self-)reflexive perspective and awareness that is sufficient to embed cultural work in the paradigm of ethical, aesthetic, pragmatic, and political convergences? While this paradigm is framed by what Ascott describes as the "telematization of the creative process [in which] the roles of the artist and viewer, designer and consumer, become diffused; [and] the polarities of maker and user become destabilized" (1990; 2003:242), the features of "feedback, self-determination, interaction, and collaborative creativity" (Ibid.) play an inadvertently crucial role in this regard. Ascott who, as Shanken points out (2003:26), pioneered cybernetics as a pedagogical tool in art, states:

> Contrary to the rather rigid determinism and positivism that have shaped society since the Enlightenment, however, these features will have to accommodate notions of uncertainty, chaos, autopoiesis, contingency, and second-order cybernetics of a fuzzy-systems view of a world in which the observer and observed, creator and viewer, are inextricably linked in the process of making reality—all our many separate realities interacting, colliding, reforming, and resonating within the telematic noo-sphere of the planet". (1990; 2003:242-43)

In addition, Ascott's criticism of the traditional notion of the "artwork as a window onto a composed, resolved, and ordered reality" (Ibid.:237) and his emphasis on the *artistic process* and not the product (Shanken 2003:26) offer a stance from which to conceive of cultural work as an engagement invoking interaction with the viewer, audiences and the environment. This notion of cultural work as an artistic process and an interactive and dynamic/(self-)reflexive activity finds itself reflected in Ascott's contemplations on the status of the art object and the new telematic interface:

> The focus of the aesthetic shifts from the observed object [the art object] to participating subject, from the analysis of observed systems to the (second-order) cybernetics of observing systems: the canon of the immaterial and participatory. (...) [C]ontent is disposed of at the interface by reinserting it, transformed by the process of interaction, back into the network of storage, distribution, and eventual transformation at the interface of other users, at other access nodes (...). (1990; 2003:237)

[147] Edward A. Shanken is a scholar, writer and editor. He writes and teaches about the entwinement of art, science and technology with a focus on interdisciplinary practices and the media.

Ascott's cybernetics-based theories of art and education, the temporal aspects of transformation and search of a new paradigm for reconceptualising the notion of art itself (Shanken 2003:26-27), and von Foerster's epistemological claim regarding second-orderness (the observing of our own frame-making) embody what Pakman has conceived of as a "permanent effort to bring mirrors to the conversation, to constantly explore the mutual influence of our interactions on ourselves and the other social actors (...)" (2003:121). This view clearly has consequences for our ways of reasoning and designing knowledges, cultural dialogues, learning environments, interactions, discussions, and the creation of possibilities for individual agency and identity.

In the final conclusions in chapter 5, I will (re)address some of the ongoing challenges of this research. My aim is to examine the proposed socio-epistemological second-order "model" of cultural work in the context of educational, moral-political and ecological governance challenges for the humanities and the arts, and the civic dialogues which they promote. I will discuss the contradictions and key challenges of *cultural knowledge work*: non-knowledge, human reasoning, the principal function of knowledge spaces, the search and definition of "third" spaces of knowledge, cultural (un)learning or "antilearning" (Liu 2004)—and the (biopolitical) production of the common as outlined in chapter 3. Based on the evidence provided in this dissertation that the civic dialogues of the humanities and the arts rely on more fragmented sites and are faced with the continuous growth of science and technology, instrumental values, and the pressure of the globally-functioning (corporate) knowledge cultures of lifelong learning and learning organizations (Liu 2004), I sketch a further round of discussions of the ethical, aesthetic, pragmatic and political stance of democratically-deliberated post-industrial cultural work in order to map possibilities of alternative futures.

5. Conclusions and Outlook

> The essence of knowledge is, having it, to apply it; not having it, to confess your ignorance. (Confucius)

In an attempt to elaborate on a new theoretical framework for post-industrial cultural work and knowledge, the aim of this dissertation has been to conduct in-depth inquiries into the practices, nature and theory of cultural work and the humanities- and arts-based civic dialogues which cultural work promotes. I have ventured into three case studies in order to attend cultural practices and ask how these practices work as emerging properties: a mixture of heterogeneous materials, relations and agentic powers that become more stable and durable in constructing public (techno-)socio-cultural spaces of knowledge. Actor-Network Theory has served as a conceptual and methodological tool to comprehend the agency of cultural work practice in these settings, to understand how socio-economic-technological realities and civic dialogues "are done", and to explore their material-semiotic environments, representations, ethical dimensions and politics. I have analysed key issues and presented insights concerning cultural work governance. My more challenging observations are based on the empirical material of the case studies and my reflections in the previous chapters. The key insights that I will discuss in more detail in the sections to follow can be summarised as follows:

- There is a necessity to articulate and integrate our non-knowledge, contingencies and ambivalences into cultural work practice and civic dialogue-making with regard to the governance of science and technology. In the face of public unease with science, new significant forms of democratic deliberation in social and moral-epistemological-political terms should be found that support future directions of the governance of cultural work.

- Uncertainty-oriented approaches and (self-)reflexive inquiries into our non-knowledge pose a new challenge to cultural work and the production and dissemination of knowledge in cultural and civic contexts. The practicability of these issues is particularly vulnerable in view of the tendency of humans to externalise contingencies and favourise certainties over uncertainties.

- (Self-)reflexivity and collective awareness about what we do and how we act should feed into governance and policy of cultural work and knowledge. The way to achieve this is to foster our individual and collective sensitivities to collaborative concerns, and to spur public debate and discussions of shared aspirations and cultural goals.

- Cultural and scientific learning are significantly challenging cultural work with implications for

governance and publics. Faced with the incalculable threats of the world risk society (Beck 2009), the study proposes cultivating a more anticipating awareness that is particularly sensitive to cultural values, shared interests, and the *consequences* of what we do and how we act. Potentially constructive practices should envision moral-political engagements and the sustenance of new cultural workplace identities with an emphasis on the premediation of decisions, social priorities, alternative options, democratic aspirations and dialogic exchange.

- Von Foerster's ethical imperative "Act always so as to increase the number of choices", and the possibilities of "multiplying" alternatives envisioned by Pakman, open a socio-epistemological horizon of options in the cultural workplace that could settle knowledge trajectories with an emphasis on moral-ecological aims.

- There exists, I suggest, among the diverse moral, ecological and pragmatic questions at stake concerning our collectively shared social imaginations of scientific and technological developments a socio-epistemological-political responsibility for cultural work. It should not be a matter of the more, the faster and the better, but of encompassing our wider cultural perceptions, civic concerns and diverging views of what "is really going on".

- From within the proposed socio-epistemological second-order framework of cultural work, the study, by envisaging the integration of second-order approaches into cultural work practice proposes developing and institutionalising alternative frames and stances associated with precautionary politics, and more inclusive pluralistic discussions, educational formats and actions.

- The obstruction of important dimensions of learning as a result of efforts to sustain the predominant culture of instrumentalism (Felt, Wynne et al. 2007) poses a core problem of cultural work and the underlying governance culture, as I have argued. This concerns both our authoritative knowledges and our non-knowledge. It is only through critical reflection and explicit articulation of our Western epistemological and political high stakes as to what we count as knowledge (cf. Turnbull 2000), and our ways of reasoning that we can learn to grapple with the underlying rationale and authority of our knowledge.

- There exist unrecognised dimensions of unlearning which accompany disciplinary knowledge-production and instrumental learning (cf. Felt, Wynne et al. 2007). For the governance of cultural work, this means articulating (un)learning opportunities as constructive inquiries that should encompass these unrecognised dimensions of unlearning.

- The (techno-)socio-cultural spaces of knowledge investigated in this thesis suggest ongoing inquiries into the potentials of these spaces with the aim of counteracting the cultural and institutional paradigm of instrumental orientations and academic capitalism. New forms and ways to incorporate educational, (non-economic) moral and ethical issues about pressing social and political concerns into institutionalised governance forms of cultural work and civic dialogue-

making are proposed.

- The prevailing capitalist cultural practices and the "moral vacuum at the heart of cultural industries" (Banks 2006:459) pose a significant challenge. In view of the failure of (global) capitalism to re-establish an ecologically sustainable world and new cultural and political values, there is a necessity to explore new practices, socio-cultural spaces and potential life-worlds from within the fragmented public face of the humanities and the arts. There exist unused post-industrial playgrounds of capitalism on which alternative public-spirited epistemologies and action fields that resonate with the democratic requirements of knowledge could be developed.

- There is a challenge to explore the viability of alternative (techno-)socio-cultural spaces of knowledge calling for new interactions between viewers, audiences and the environment. In the context of the requirements of the spatialisation and distribution of knowledge, it will be necessary to reflect on the principal function and role of these spaces.

- In seeing post-industrial cultural work as a type of *knowledge work* that could convincingly address and promote valuable, "reflexive" and ethical concerns, the study suggests linking cultural labour to the social and cognitive scope of biopolitical production in order to cultivate and perform forms of freedom and resistance (cf. Hardt and Negri 2009).

- An "ecological" understanding of the different kinds of cultural processes which we inhabit and are inhabited by is proposed. It could support us in our efforts to renew paths for (self-)-reflexivity, contemplation and consciousness with the aim of building sustainable communities and new public arenas that allow the cultivation of more open, ecologically-oriented learning processes and future action through practices of cultural work.

In this thesis I have examined different humanities- and arts-based civic dialogue projects as an outcome of cultural work and *knowledge*, and have taken the reader on a journey through what at first glance may have looked like a selection of three disparate projects. Yet, the diversity of these projects is significant in itself as it captures the broad, cross-cutting approach needed to develop this thesis in which I have investigated the role and significance of knowledge and cultural *knowledge work* as an integral part of the establishment of humanities- and arts-based dialogue projects. Throughout, my emphasis has been on the reconceptualization of cultural and scientific learning in the face of incalculable threats and risks as I have reflected on the role of "culture" in contemporary society, the role of the cultural worker as an *epistemic* actor and the challenge of encompassing different rationalities, contingencies and non-knowing (our *inability*-to-know or wilful ignorance; Beck 2009:126).[148] My proposal is to address these issues deliberately and to take into account the epistemic other of the

[148] The search for different culturally specific modes and practices of learning and reasoning is a pressing concern and I am well aware that this is a much wider issue, one that encompasses the *preconditions* of our ways of learning and understanding. These have their origin in the cognitive processes of "delight, fascination, enthusiasm, curiosity etc.", as von Foerster has repeatedly pointed out (1993:128).

"unknown" (Felt, Wynne et al. 2007:63) in constituting and developing alternative forms of learning in epistemological and political terms. Furthermore, I want to emphasise that the proposed second-order stance and socio-epistemological framework for cultural work, and its entanglements with reflexivity, ethics, aesthetics, pragmatics and politics, provides an anchor for important inquiries contributing to the improvement of dialogue-making and public knowledge exchange in various ways. These potentially (self-)reflexive inquiries into our non-knowledge and the essence of what we purport to "know" constitute an important element of the required critical thinking about instrumental and non-instrumental values, about dominant economic, scientific, technical and political realities and "certainties", and about ways in which to remake the civic cultural dialogues themselves—but also what it means to act collectively and individually.

As a consequence, a central motivation of this thesis has been to increase our sensitivity to collaborative concerns, to provide an awareness of the *consequences* of what we do and how we act, and to contribute to the development of ecological foundations for culture, society and the planet. The production of the common and the (biopolitical) production of social life have thus emerged as a central theme. In the preface to *Commonwealth*, Hardt and Negri point to the primary effect of globalization of creating a common world, "a world that, for better or worse, we all share, a world that has no 'outside'" (2009:vii). For Hardt and Negri, "the common" thus stands for "the common wealth of the material world—the air, the water, the fruits of the soil, and all nature's bounty (...)" (2009:viii). In emphasising the individual's capabilities to sustain what Hardt and Negri articulate as an "ethics of democratic political action" (vii), I wish to conclude that *Fairytal*e—in contrast to my previous more critical arguments in chapter 2.4—has perhaps opened a small space for the (micro-)political production of the common.

Non-Knowledge and Uncertainty-Oriented Approaches

I further suggest that the inquiries into provoking a public response about social impact, instrumental imperatives and policy challenges need to be constantly rethought in order to evaluate new possibilities for social interaction (cf. Pakman 2003), technosocial commitments, alternative knowledge trajectories and more dynamic ways of contemplating the world. But, what knowledges, imaginations, choices and desires should these more basic inquiries consider and articulate? And, if the "medium" of reflexive modernization, as Beck argues, is not knowledge, but "more or less reflexive (...) non-knowledge" (2009:122), how should the various kinds of non-knowledge be addressed and publicly (re)-presented? In outlining the "terminologically unhappy" distinction between "reflection" (knowledge) and "reflexivity" (side effects) (Ibid.:123; see also chapter 3.2) in industrial modernization and replacing it with the distinction between *knowledge* and *non-knowing*, Beck states:

> For the concept of "non-knowing" (and the overlap and possible magnification of forms of knowledge and non-knowing) opens up not only new horizons of questions, but an unexplored jungle of interpretations, meanings and misunderstandings as well. "Non-knowing" can be conscious or unconscious, concrete or theoretical, it can signify wilful ignorance or an inability-to-know (...). When we deny our lack of knowledge, are we aware of what we are denying? Or

> is this an unconscious defence mechanism? Are there cultures of denial also, and especially, of non-knowing? How can environmental movements break down these walls of silence? By denying their own lack of knowledge and pretending to know what they cannot know? Or by revealing the general lack of knowledge and by giving expression to the resulting predicament that, in view of this inability-to-know and the growing threats, we are compelled to make decisions concerning the uncertain future? (Ibid.)

There are no simple answers to the pressing issue of how to integrate non-knowledge into the practices of cultural work and perception in order to nurture democratic deliberation in social and moral-epistemological-political terms. While non-knowledge and the possibly harmful unknown unknowns must be taken into account with regard to ecological-political demands, as diverse authors have repeatedly emphasised, the epistemic features of non-knowledge call for uncertainty-oriented approaches. Furthermore and while the scientific culture of non-knowledge is *control-oriented* and ecology is *uncertainty-oriented*, as different authors argue, the limits of our knowledges and the limits of scientific knowledge are a core problem with regard to risk governance, critical thinking and in particular concerning the linking of the humanities and the arts with civic dialogue about the risk issues of wider societal concerns. My final proposal is to integrate the second-order approaches (alternative frames) into cultural work practice in a sensible way in order to develop, foster and institutionalise second-order stances associated with precautionary politics/actions (Bösch et al. 2006:300), new ecological practices, and modes of (un)learning in which our non-knowledge, unrecognised contingencies and notions of uncertainty are implemented.[149]

The Failure of Modern and Post-Modern Frameworks and the Crisis in Higher Education

Having ventured in this thesis into the problem of cultural and scientific learning in our modern evidence-based and science-dominated culture, the Gotthard Base Tunnel exhibition has revealed the obstruction of important dimensions of learning as a result of efforts to sustain the predominant culture of instrumentalism and what Felt, Wynne et al. have identified as the "de-facto emphasis given to instrumental learning and knowledge" (2007:63). Turnbull's account of the failure of modernist and postmodernist frameworks (Giddens' and Hutton's [2000] criticism of neoliberal philosophy can be included therein) should therefore be taken seriously as these frameworks seem to be inadequate to the task of guiding us in a world in which—according to Turnbull—"the majority of the world's population still live in poverty, the resources that made 'modern civilisation' possible are fast being depleted, and the byproducts of that civilisation threaten to transform the climate of the whole world" (2000:2). While, as Turnbull further states, the rethinking of our ways of producing knowledge and the kinds of knowledges we value is a matter of the recognition of their "unplanned and messy nature" (Ibid.:1), and in order to arrive at a useful concept of "third" spaces for knowledge which are entangled with diverse heterogeneous and complex practices of cultural labour (as we have seen), our ways of reasoning are

[149] In their discussion of risks posed by innovations and new products in areas such as nanotechnology, agro-biotechnology (GMOs), and chemistry, Bösch et al. stress the necessity to "acknowledge non-knowledge in the sciences as well as in (...) public debate", and to "elaborate and preserve a variety of cultures of non-knowledge as a basis of intercultural critique and as a rich source of future action" (2006:300).

a particularly challenging issue. The important point here is that this, according to Turnbull, is not just a problem for the sociology of scientific knowledge (SSK), but "*the* millennial problem" (211). Our incoherent reasoning about the world which exposes the structural nature of the world-sized problems and exploitative built systems for which we have ourselves to blame seems indeed to be a core problem in the reflexive modernization of both our knowledge and non-knowledge.

Besides the exploitation of the environment, the dangers of terrorism and nuclear proliferation, increasing poverty, global warming and the possibility of climate wars, the supposed crisis in higher education to which Blackmore refers as the "power/knowledge crisis" (2001:353) poses an additional challenge. In summarising the main argument of various authors that universities are "no longer the primary producers, determiners, transmitters and authorizers of valued knowledge" (Ibid.),[150] Blackmore calls into question the curriculum of the "liberal arts" university and its privileging of an instrumental attitude to higher education that values more its "vocational function in contributing to individual careers or national productivity rather than intrinsic value" (354). As a consequence, the question arising here is whether (techno-)socio-cultural knowledge spaces of the kinds which this thesis has investigated may serve as educational, (non-economic) moral and ethical spaces capable of counteracting the institutional paradigm of instrumental orientations and academic capitalism that appear to threaten the "real cultivation of the mind", as Blackmore claims (Ibid.). This is an important issue and must be included in discussions about the unsustainability of both the fragmented public face of the humanities and the arts for our awareness of societal and political concerns, and the kinds of knowledge spaces needed to address the social, economic and moral-epistemological facets of our existence.

Socio-Political "Third" Spaces

In contributing to Enrique Dussel's[151] (1993) vision of the "transmodern"—the need to move beyond the modern—Turnbull points to the requirement of establishing totally new "third" spaces for knowledge (2000:228). While such spaces, I suggest, exist perhaps somewhere beyond and yet within the national and transnational described by Saskia Sassen,[152] they could, as Turnbull proposes, reinforce the "kind of fertilisation between different knowledge traditions that Dussel envisions" (Ibid.), and thus serve as moral, epistemological and socio-political "third" spaces in which *different* forms of knowledge are combined, fostered and transmitted. By problematising the spatialisation and distribution of know-

[150] The authors are Ronald Bernett, Ann Griffin, Ann Langslow, Stephen McNair, Richard Miller, David Smith and Simon Wortham.

[151] Enrique Dussel is a Latin American writer and philosopher who has mainly contributed to political philosophy and the philosophy of liberation and ethics.

[152] While, as Sassen argues, between national and global levels a fresh landscape of territory, authority and rights is being opened, "third spaces" span the globe in the form of "trans-local geographies connecting multiple, often thick, sub-national spaces—institutional, territorial, subjective" (2008, no pagination). However, these fragments of a new reality, according to Sassen, vary tremendously in their scope and in their aims—"from greed to the common good" (Ibid.). They are, Sassen adds, at one end private frameworks such as the *lex constructionis*—a private agreement paraded as "law" developed by the major construction companies in the world "to establish a common mode of dealing with the strengthening of environmental standards in a growing number of countries, in most of which these firms are building" (Ibid.). The issue of these "third spaces" which Sassen addresses seems to me of high relevance. Yet, it is by no means certain that they are as novel as suggested. Arguably, interstitial, non-state spaces have always existed within coherent territories of national sovereignty. Furthermore, the term "third space" is misleading here, since the spheres of the national and the global overlap today and are not easily separable.

ledge and by reflecting the principal function of knowledge spaces, Turnbull acknowledges the moral and epistemological importance of these spaces as they mirror our understanding of the physical world and could help to connect the laboratories (of the sciences) to the social and public spheres in society. According to Turnbull:

> Just as they are constitutive of our life world, our ways of understanding and of controlling the material world are transforming both that world and ourselves, and in so doing form a kind of knowledge space. The kinds of spaces that we construct in the process of assembling, standardising, transmitting and utilising knowledge govern our lives today. Not only do we have to build extensions of the laboratory into society for the knowledge produced there to be effective, but certain relationships and behaviours are required of us. Knowledge spaces are as much moral as they are epistemological, political or technical. Hence, the spatialisation of knowledge also leads to the necessity for putting the problem of distribution on the agenda. (2000:12)

In view of the epistemological and moral *disciplining* of people that both Turnbull's case study of a malaria vaccine and the public representation of technoscientific knowledge in the Gotthard Base Tunnel exhibition suggest, the spatialisation of knowledge encompasses further important questions regarding the construction of knowledge spaces and the challenge to explore their viability and new interactions between viewers, audiences and the environment, as well as concerning knowledge's authoritative forms represented by technoscience today.

Rationality and the Redefinition of (Techno-)Socio-Cultural Knowledge Spaces

After subjecting the case studies to the required critical analysis with regard to learning and educational impact, we see quite clearly that while the civic dialogue project of the Gotthard Base Tunnel exhibition provides a mirror—technoscientifically speaking—of what we *already* know, and does not "hold out" against the capitalist frameworks that essentially sustain it, *Manufactured Landscapes* shows the *consequences* of our knowledge with a central concern for the rational, economic and political behaviours of human actors. However, neither the exhibition nor the film (although it offers a critical vista of China's industrialization and the destructive side of globalization) grapple with the underlying rationale and authority of our current Western domination on the planet, nor do they call into question its embodiment of rationality, strong objectivity and universal reason (cf. Haraway 1999; Turnbull 2000). Moreover, the case study of the Gotthard Base Tunnel exhibition reveals how cultural work, knowledge, creative agency, economic pursuits and capital interrelate in embedded contexts of trans-national interests and productivity, and how these issues are altogether impacted by societal values determining the instrumental and evidence-oriented proliferation of technoscience and the outcomes of cultural work. Additionally, if we take into account that scientific knowledge has been faced with declining public legitimacy for quite some time now, the exhibition's attempt to make meaning of technoscience and society by promoting the culture of instrumentalism appears to be highly problematic. It follows that the problems of rationality and universality, and the question of

whose knowledge should be authoritative, as Turnbull points out (2000:210), must be included in both the discussion of how to redefine public (techno-)socio-cultural knowledge spaces, and how to spur civic dialogue about pressing social, ethical and political concerns.

It is my contention that these issues are altogether very challenging and must feed into democratic governance questions of civic dialogue-making with regard to the public representation and reception of knowledge, pluralistic forms of criticism and the enhancement of social interaction. To conclude, there are no simple answers to the many demands placed throughout this thesis on the interrelation between knowledge, cultural work and public dialogue which are linked to the quest for wider transformations in society and culture. While the knowledge claims of the humanities and the arts rely on more fragmented sites and institutions in scientific and technical fields provide ample space for the consideration and dissemination of knowledge, the central challenge is, I suggest, to develop and cultivate the spatialisation and dissemination of knowledge based on a type of *cultural (non-)knowledge work*. By pooling collective experience, resources, devising and facilitating engaging dialogue activities, cultural work—by interrogating, arbitrating and critically mediating our (non-)knowledge—could galvanise pressing social, democratic and educational developments.

Cultural Work's Socio-Epistemological-Political Responsibility

Finally, an argument that I wish to put forward is that the construction of democratic and educational humanities- and arts-based "third" spaces of knowledge amidst the globally-functioning knowledge economies depends on the successful spatialisation of knowledge *corresponding* to what is "really going on" in thought and practice, and that the recognition of the *consequences* of this practice (Lash 1999, no pagination) is centrally important. Hence, the issue to address is the construction of *genuine* "third" or *interstitial* spaces including the veracious civic deliberations and socio-cultural practices needed to sustain them, and this must be seen as deeply encoded in the socio-epistemological-political responsibility of cultural work. In other words and based on von Foerster's aphorism that "reality equals community" (1973; 1998), these issues are part of a larger moral-ecological-political perspective embedding cultural work and knowledge in a framework of implicit collectively shared social imaginations about science and technology, wider cultural perceptions and sincere civic concerns, and diverging views of what "is really going on", as outlined before. If civil societies need not only to be *informed*, but also *mobilised* with regard to ecologically, economically and socially sustainable action, as Wiegandt claims (2009:xii), moral and pragmatic questions—which the proposed socio-epistemological-political scope of cultural work and learning entails—must be addressed.[153]

[153] While these questions are significant in themselves, they are particularly relevant with regard to the construction of what Lefebvre has conceived of as a "logico-epistemological" space of practice—a social and epistemological space manufactured to convey "sensory phenomena, including products of the imagination such as projects and projections, symbols and utopias" (1974; 2009:11-12).

(Un)Learning Opportunities For Valuable Inquiries

In order to practise cultural work as a form of knowledge work, Liu's theory of "knowledge work" as a "parallel system of learning" (2004:305) adds an interesting point to the discussion of the possibilities for an ethical and moral-political second-order perspective of democratically-deliberated cultural work. As outlined in the Introduction (see chapter 1.2.3 *The Ambiguity of Knowledge Work*), Liu sees knowledge work not only as a parallel practice of learning, but also as a practice of "antilearning—that turns away from an educational system it believes represents dominant knowledge culture" toward—according to Liu—a "popular culture whose corporate and media conglomerates, ironically, *are* dominant knowledge culture" (305). While Liu defines knowledge work as *intellectual* work (392) at the "techno-informatic vanishing point of contemporary aesthetics, psychology, morality, politics, spirituality, and everything" (3), the *cultural worker* as a *knowledge worker,* I suggest, could play a constitutive and creative role on a global scale. He could play this role not only as a critical observer, but moreover, as a social and political interpreter, practitioner, supporter and developer of second-order stances associated with the precautionary (micro-)politics of ecological practices and biopolitical production in creating (un)learning opportunities for valuable inquiries. Cultural work understood as intellectual work would thus devise alternative (techno-)socio-cultural spaces, and—as "spatial practice" in Lefebvre's sense—provide a pragmatic focus on more ecologically-oriented and moral-political concerns, aims, social imperatives and the unrecognised dimension of unlearning (cf. Felt, Wynne et al. 2007:65).

The Moral Economy and the Pursuit of a Non-Instrumental Rationale

In various parts of my text, I have problematised the hegemony of capitalist social relations as a challenge for cultural work to establish alternative spaces and practices, and to re-establish ethical engagements which are increasingly subject to the "gentrification and the commodification of public space", as Banks points out (2006:463). The prevailing capitalist cultural practices pose a significant challenge to current practices as the character of economic life and the culture of instrumentalism appear to impact the moral foundations of human identity, engagement and sociability in problematic ways. In arguing that the "moral purpose (...) is driven by the instrumental imperative to make money in a competitive market", and "generating social outcomes or benefits is not usually prioritized" (Ibid.:458), Banks points to an emerging "critical orthodoxy" which is carried by persuasions that "something is being 'lost'—in moral-political or social terms—by the increased capitalization and commercialization of the cultural industries" (Ibid.).[154] It can thus be said that the "moral vacuum at the

[154] Ironically, this research has been conducted in a time in which institutions such as museums or art galleries, instead of taking on more decisive and influential roles as mediators, authorities and arbitrators in the business of defining and grasping part of social reality, are increasingly embroiled in markets—risking their long-term reputations in protecting public interest. An example of this development is the decisions taken today by art museums as to what objects to acquire and what to exhibit, which affects the prices that those works of art and others related to them can command in the market. (Source: Ellis 2008, no pagination). Until the outbreak of the global financial crisis in fall 2008, another relevant example was the rush of numerous international collectors to art fairs such as Art Basel, Switzerland, and Art Basel, Miami Beach, to fill newly-founded independent museums and prestigious public spaces, blurring the boundaries between private collectors and museums reselling works to refresh collections and converting art into a vehicle for financial profit. (Source: Pollock and Adam 2008, no pagination).

heart of cultural industries", as Banks writes (459), presents very real challenges regarding the pursuit of a non-instrumental rationale, while this has at the same time a significant impact on cultural work (466). By drawing attention to both cultural entrepreneurs' "varied and diverse motives and actions" (460) and the potentials of "progressive social and political action contained within cultural work" (Ibid.), Banks states:

> [N]on-instrumental motives can shape practices of cultural entrepreneurship, and (...) the binding effects of sense of place and community obligation can act as focus for social imperatives that mediate and impose limits around the pursuit of instrumental, profit-seeking goals (...). The accounts of these cultural entrepreneurs contrast with the pessimistic assessments of neo-liberal fatalists, as they reveal moral commitments that contradict the popular model of the self-interested and de-politicized creative. (466)[155]

The claims about the demoralization of cultural work and the proclaimed possibilities of "morally progressive" or "socially useful" (458) cultural work practice raise questions concerning observations such as those by Banks that "rampant individualization, a culture of self-interest, and the primacy of market rationality", as many believe, have "rendered the economy more unethical and immoral" (456). In this respect, von Foerster's ethical imperative "Act always so as to increase the number of choices", and the possibilities of "multiplying" alternatives envisioned by Pakman open a beneficial socio-epistemological horizon of new options in the cultural workplace for settling knowledge trajectories in moral-ecological and political terms. As should be clear, there is, however, no direct way out of the actual to the potential with regard to the present challenges of cultural, social and environmental renewal.

European Autochthony

Many of the challenges such as environmental abuses, economic inequality and other far-reaching humanly-constructed issues such as the world's increasing marketization, commodification and disneyfication (cf. Ascott 2006; Capra 2002; Gibbons et al. 1994; Horkheimer and Adorno 1947) are impacted as social and moral matters by capitalist and cultural effects and those of globalization. Industrial society's logic of market rationality and the technoscientific global culture in which we live were not given, but historically made. The 2007 report *Taking European Knowledge Society Seriously,* from which I have frequently quoted should thus be read as a modern narrative of European autochthony. Its proposal to build a "robust, and sustainable European knowledge-society" or to "help Europe lead globally" (Felt, Wynne et al. 2007:18, 81)—the claim to global European leadership in science, innovation and governance—should remind us of our Western epistemological and political high stakes as to what we count as knowledge, and what it means "to be seen as setting the epistemological standard", as Turnbull points out (2000:6). These are altogether significant issues and they entail further questions in the context of the sociology of knowledge and anthropology which this thesis

[155] These insights are based on empiricial case studies conducted as interviews with cultural entrepreneurs in Manchester, UK. The sample, although not representative, is primarily drawn from the "Cultural Industries and the City" project (1980–1999), and the "Skills for the Missing Industry's Leaders and Enterprises" project.

has not endeavoured to answer.

In sum, this research has conducted in-depth inquiries into the theory and the socio-epistemological scope and practices of post-industrial cultural work which I have investigated from within the wider socio-economic-technological reality providing the matrix for our lives and social identities. While I have raised critical questions regarding the possibility of how to subvert capitalist values, to heighten strong reflexivity, and to promote new cultural work practices in order to undermine common cultural methodologies in the humanities, arts and civic dialogue-making, I have also raised questions concerning our deeply-entrenched cultural habits, instrumental routines and assumptions that appear to justify established imaginations, commitments and anthropocentrism. The general aim of my forays into the civic dialogue possibilities of humanities- and arts-based projects has been, however, to lay out the importance of a different form of collective awareness, intuition and (self-)reflexivity about what we do and how we act in order to spur discussion of our shared aspirations and cultural goals—our lives as a social group and as individual members of society. This involves our knowledge-of-reality in contributing to public conversations and dialogue about our being-in-the-world as social, cultural, economic, political and moral actors.

In addition, the disregarded potentials of the humanities and the arts as an action field for pressing human affairs raise further important questions regarding the creation of more open, democratic and pluralistically-functioning social knowledge spaces and frameworks. The generation of these spaces is linked to the conceptual and practice-based challenges in the cultural workplace and the practices of cultural work in particular which this thesis has examined in order to reorient the humanities, arts and civic dialogues towards providing an *anticipating* awareness around shared interests, purposes and cultural values.

The Social Construction of Reality and the Cultivation of Non-Instrumental Learning Processes

The key challenges uncovered in this thesis clearly point to the problem of how to avoid externalising contingencies or zooming away from uncertainties which are deeply implicated in our values, interests and our social and political realities. Drawing on Durkheim (1909; 1982), McCarthy (1996), and Latour (1993; 1999a), the concept of a *social reality* as a *reciprocal* or *dialectical* relationship of mutual constitution provides an interesting epistemological anchor as it supports Massey's notion of the "multiplicity of trajectories" (2005:119) which social space as an open and political sphere allows us to envisage. In proposing to recapture "several elements that are conspicuously absent" from the phenomenologically grounded Berger and Luckmann 1966 treatise *The Social Construction of Reality*, namely the political atmosphere in particular, McCarthy writes:

> [I]n keeping with Berger and Luckmann's argument, "reality" and "knowledges" are discussed in process terms: *reality and knowledges are reciprocally related and socially generated*. This is no less true of the social worlds we inhabit than of the selves we possess: both exist as real for us; both our worlds and our selves are spun from knowledges that render them real and meaningful. Accordingly, *knowledge refers to any and every set of ideas accepted by one or*

another social group or society of people, ideas pertaining to what they accept as real. (1996:2)

McCarthy's notion of reciprocity between reality and knowledges is mirrored in Latour's conceptualizations of the "collective" and the *relationship,* and it is the political dimension of the matrix of humans and nonhumans (explored in particular in the case study of the Gotthard Base Tunnel exhibition) which is made central "by collecting the cosmos in one liveable whole", as Latour writes (1993:4). My point in invoking McCarthy's notion of reciprocity is that the concept of social and political reality as a reciprocal or dialectical relationship of mutual constitution provides a gateway to an "ecological" understanding of the different kinds of cultural processes which we inhabit and are inhabited by, and supports us in efforts to build sustainable communities and new public arenas allowing the cultivation of more open, intuitive, ecological and non-instrumental learning processes and future action.

Contribution and Final Considerations

This research has studied three heterogeneous humanities- and arts-based civic dialogue projects as cultural custodians and aggregates of human intellectual activity and cultural work. It has provided an analysis of the social, moral-economic, epistemological and political dimensions in which the societal contributions of these projects are embedded and linked to what I have colloquially and propositionally called *cultural knowledge work.* My theoretical analysis has thus attempted to sketch a rationale for an epistemology of post-industrial cultural work as a type of (non-)knowledge work contributing to more (self-)reflexive, uncertainty-oriented, ethical, pragmatic and political convergences by emphasising the importance of new sustainable action fields for the humanities and the arts, the creative and cultural industries, the governance of science and technology, and innovation and risk in particular. Throughout, this thesis has emphasised the importance of *sustainable development* by incorporating *culture* as an equal discipline alongside the economy, ecology and society.

Recalling the observations with regard to the political relevance of (techno-)socio-cultural spaces and their availability for public knowledge exchange and collaborative engagement, this thesis has emphasised the importance of creating democratic knowledge spaces for their fruition, better governance and more resilient ways of practising civic dialogic exchange. While the agency and the educational potential of cultural work with regard to the establishment of these spaces has been largely ignored in theory and is thus significantly under-theorised, this research has contributed to a discourse about future knowledge practices in cultural production. These issues are subject to proposed changes in the governance of cultural work in cultural and institutional environments in which cultural workers, "knowledge intermediaries" in domains of media and arts-based occupations, academic experts and scholars in philosophy, sociology, policy and risk analysis play a central role as socio-political stakeholders in catalysing public interest and discourse around key civic issues.

Along these lines, I have introduced a theoretical and practice-oriented "policy framework" for cultural work governance based on von Foerster's and Pakman's second-order understanding of

human thinking, reflexivity and consciousness. Their understanding is central to the contemporary world-view, in order to moderate our behaviours, actions and new critical practices. With the intent of promoting an in-depth ethical and ecological awareness in the cultural workplace and civic dialogue-making, the socio-epistemological perspective proposes more participatory and "embedded" engagements with an emphasis on the creative and intuitive premediation of decisions, purposes, social priorities, democratic aspirations and dialogic exchange. Throughout, my intention has been to elaborate on a new theoretical framework for cultural work and knowledge which pays tribute to the socio-economic-technological realities in which our lives are embedded. I have thus connected my reasoning to proposals of how to *act* and by repeatedly emphasising the pragmatic challenges of producing social wealth and the common, I have included in my discussions the prospects of new cultural learning processes. Finally, the focus of this thesis on the moral-epistemological-political scope of cultural work and the material-semiotic manifestations and aggregates of cultural production (instead of an analysis of particular patterns of social relations or the labour process itself), has shed light on the deeper ontological and (micro-)political significance of cultural projects and their material environments, representations and ethical dimensions. My analysis of "cultural content", languages, cultural narratives and the "hows" of enacting specific realities has thus attempted to contribute to discussions of the future formats of cultural production in order to bring forth renewed paths for reflexivity and contemplation.

With my analysis of the biopolitical scope of cultural work, I have contributed to the debate on how cultural work as a productive practise in constituting and (re)creating social realities, meanings and new objects, and in defining collective and political functions of knowledge can sustain what Hardt and Negri have conceived of as the (social) *accumulation* of the common. While for *The Wall Street Journal* Hardt and Negri's work *Commonwealth* is the "Communist Manifesto 2.0" appearing under the "prestigious imprimatur of Harvard University Press" and is a "dark, evil book" (Anderson 2009, no pagination), I have linked some of my key arguments to the core ideas of *Commonwealth* and used it as a rich source of inquiries into more accountable cultural work practices around the concept of "common wealth". As a consequence, Hardt and Negri's work has served in this thesis as a valuable intellectual and cognitive resource as these authors offer a broad range of ideas of how to constitute our common wealth and refresh our collective social life on our precariously balanced and finite planet.

With the emphasis on the accumulation of the common which Garrett Hardin[156] discussed as early as 1968 in *The Tragedy of the Commons* by pointing to the necessity to fundamentally extend our moral-political awareness of unsustainability issues such as overpopulation, environmental exploitation etc.,[157] this thesis has problematised neoliberal philosophy, particularly in its neoliberal form of global capitalism. Hence, I have raised in various parts of my text critical questions with regard to the failure of (global) capitalism to re-establish an ecologically sustainable world and new cultural and political values at the heart of social life, with the intent to sensitise the reader to contemporary forms of cultural production and cultural work which are vulnerable (as we have seen) to what Banks and many observers call the "totalizing hegemony of capitalist social relations" (2007:157).

[156] Garrett James Hardin (1915–2003) was a leading American ecologist.
[157] *The Tragedy of the Commons,* which originally appeared in *Science*, has since been anthologised many times, making it one of the most-reprinted articles ever to appear in any scientific journal.

Regarding the actual possibilities of a practice-oriented epistemology for cultural work in constituting civic dialogues of different kinds, the limitations of this research must also be addressed in the final reflections. The proposed socio-epistemological model of mutually reinforcing reflexive, ethical, pragmatic and political convergences—despite opening a space to agitate for narrower intellectual and (micro-)political activist goals in the context of the global corporate knowledge cultures and multinational corporate power—relies on the fragmented public face of the humanities and the arts. The concern of this thesis regarding the present situation surrounding the marginalization of the humanities and the arts and their achievements in relation to the dominance of the discourses of science, technology and global (corporate) knowledge cultures therefore remains an ongoing challenge. Progress along these lines is a matter of democratic dialogue and commonly shared responsibility.

The extraordinarily heterogeneous complexity of post-industrial knowledge in socio-cultural environments exemplified in the Gotthard Base Tunnel exhibition, Jennifer Baichwal's film about China's industrial process, and Ai Weiwei's social dialogue *Fairytale* at Documenta 12 suggest the need for a different framework and a more fertile ground for new knowledge trajectories at the core of thinking on alternative developments. The emerging picture of global environmental decline and the threatening rate of consumption far exceeding the planet's load capacity require a different anticipating awareness and consciousness for cultural work. My final suggestion is to link Goleman's term *ecological intelligence*—our ability to *adapt* to the ecological niche in which we live (2009:43)—to what we may conceive of as a form of *cultural ecology* in the cultural workplace by which cultural work and knowledge are pooled around a creative, intuitive, metaphysical, socio-epistemological and moral-political consciousness of the common.

Cultural work and knowledge have been central topics of this research and my thesis has intersected with many of the contemporary concerns of how to involve civil society in scientific, technological and economic developments in order to address urgent policy changes that are often taken as highly scientific in nature—including climate change, sustainability, environment and development. An overarching aim of my text has involved questioning the manner in which science so often figures as a sort of final arbiter of a ceaseless problematic. Yet, my real focus has been on the political, ethical, epistemological and moral-ecological dimensions of post-industrial cultural work which has included the prospects for a new form of communal workspace for knowledge and cultural learning. Throughout, I have been fascinated by the kinds of artefacts, material-semiotic structures, cultural metaphors, representations, symbolic "goods" and practices that we engage with and engender. I think of my approach now as a form of *cultural epistemology* which has interrogated contemporary cultural knowledge-cultures and their communicative and political potentials.

The three empirical case studies propose a different future and a different *politics* for cultural work and knowledge. With regard to what I have explored, discussed and proposed—an evolving practice-oriented epistemology for post-industrial cultural work, paving the way for other more convenient and practicable epistemologies beyond my imaginative shortcomings—I hope to contribute to future research in cultural production fields concerned with the applicability and practicability of cultural

work. This includes explorations into new practices, socio-cultural spaces and potential life-worlds, and the galvanization of new kinds of virtual to-be-built spaces for knowledge which may be linked to the unused post-industrial playgrounds of capitalism—and, naturally, to alternative public-spirited epistemologies resonating with the democratic requirements of knowledge in a globally-interrelated world.

*

Bibliography

Adorno, T. (1991). *The Culture Industry: Selected Essays on Mass Culture*. London: Routledge.

Adorno, T. (1981; 1991). Culture industry reconsidered. In: (Bernstein, M., Ed.) *Theodor W. Adorno. The Culture Industry. Selected essays on mass culture.* London, New York: Routledge. pp. 98-106.

Ai Weiwei (2007a). *Fairytales* (Original Project Proposal for Documenta 12, Kassel, Germany). Beijing: Office of Ai Weiwei.

Ai Weiwei (2007b). Interview with Ai Weiwei. *Artkrush*, 63. Available at <http://artkrush.com/128062> downloaded 5 March 2010.

Ai Weiwei, Jocks, H.-N. (2007). Das Märchen von den 1001 Chinesen. Ein Gespräch von Heinz-Norbert Jocks. In: *Kunstforum International,* 187. pp. 428-43.

Ai Weiwei, Birnie Danzker, J.-A. (2008). A Conversation with Ai Weiwei. *Yishu. Journal of Chinese Contemporary Art,* 7/4, July. pp. 10-19.

Ai Weiwei, Jocks, H.-N. (2008). Was heisst Leben? Ein Gespräch von Heinz-Norbert Jocks. In: *Kunstforum International,* 194. pp. 228-39.

Ai Weiwei (2004). A Standpoint without Position. In: *Three Gorges: Displaced Population and Three Gorges: Newly Displaced Population. Liu Xiaodong.* Beijing: China Blue Gallery, China Art Archives & Warehouse. pp. 4-5.

AlpTransit Gotthard Ltd. (Ed.) (2005). *The New Gotthard Rail Link.* Lucerne: AlpTransit Gotthard Ltd.

Altvater, E. (2007). *Das Ende des Kapitalismus wie wir ihn kennen. Eine radikale Kapitalismuskritik.* 5th Edition Münster: Verlag Westfälisches Dampfboot.

Anderson, B. C. (2009). Brothers in Marx. *The Wall Street Journal*, 7 October. Available at <http://www.manhattan-institute.org/html/miarticle.htm?id=5500> downloaded 27 May 2010.

Arendt, H. (1958; 1998). *The Human Condition*. Chicago: The University of Chicago Press.

Armstrong, J. (2009). The Public Humanist. The Marginalization of the Humanities. *Value Advocate.* Available at <http://www.valleyadvocate.com/blogs/home.cfm?aid=9435> downloaded 1 June 2009.

Armstrong, J. (2008). Virtue ethics to the rescue, possibly. *The Australian.* Available at <http://www.theaustralian.news.com.au/story/0,,24601995-25192,00.html> downloaded 1 June 2009.

Ascott, R. (2006). Gardens of Hypotheses and Geomediated Meaning. In: Fiel, W. (Ed.) *Shaun Murray. Disturbing Territories.* Wien, New York: Springer. pp. 107-13.

Ascott, R. (1990; 2003). Is There Love in the Telematic Embrace? In: Shanken, E. A. (Ed.) *Telematic Embrace. Visionary Theories of Art, Technology, and Consciousness. Roy Ascott*. Berkeley, Los Angeles: University of California Press. pp. 242-46.

Babias, M. (2007). Die Kunst des Öffentlichen in der Arena der Politik. In: Schenker, C., Hiltbrunner, M. (Eds.) *Kunst und Öffentlichkeit. Kritische Praxis der Kunst im Stadtraum Zürich*. Zurich: JRP Ringier. pp. 11-16.

Bakhtin, M. (Holquist, M., Ed.) (1981). *The Dialogical Imagination*. Austin: University of Texas Press.

Banks, M. (2007). *The Politics of Cultural Work.* Hampshire: Palgrave Macmillan.

Banks, M. (2006). Moral Economy and Cultural Work. *Sociology,* 40/3. pp. 455-72.

Bateson, G. (1979). *Mind and Nature. A Necessary Unity.* Cresskill, New Jersey: Hampton Press Inc.

Beck, U. (2009). *World at Risk*. Cambridge: Polity Press.

Beck, U. (2006). *The Cosmopolitan Vision*. Cambridge: Polity Press.

Beck, U. (1986). *Risikogesellschaft. Auf dem Weg in eine andere Moderne*. Frankfurt a. M.: Suhrkamp Verlag.

Bell, D. (1987). The Post-Industrial Society: A Conceptual Schema. In: Cawkell, A. E. (Ed.) (1986). *Evolution of an Information Society*. London: Aslib.

Bell, D. (1976). *The Cultural Contradictions of Capitalism*. New York: Basic Books.

Bell, D. (1973). *The Coming of Post-Industrial Society. A Venture of Social Forecasting*. New York: Basic Books.

Belliger, A., Krieger, D. (Eds.) (2006). *ANTology*. *Ein weiterführendes Handbuch zur Akteur-Netzwerk-Theorie.* Bielefeld: Transcript Verlag.

Bender, G. (Ed.) (2001). *Neue Formen der Wissenserzeugung*. Frankfurt a. M.: Campus Verlag.

Berger, B. et al. (2001). *The Humanities in 2010. Alternative Wor(l)ds. Report of the Working Group on the Future of the Humanites to the Board of the Social Sciences and Humanities Research Council of Canada.* Ottawa Ontario: Social Sciences and Humanities Research Council.

Berger, P. L., Luckmann, T. (1966). *The Social Construction of Reality: A Treatise in the Sociology of Knowledge.* New York: Doubleday.

Bińczyk, E. (2008). Looking for Consistency in Avoiding Dualisms. *Constructivist Foundations*, 3/3. pp. 201-7.

Blackmore, J. (2001). Universities in Crisis? Knowledge Economies, Emancipatory Pedagogies, and the Critical Intellectual. *Educational Theory,* 51/3, Summer. pp. 353-70.

Bohm, D. (1996). *On Dialogue.* 1st Edition London and New York: Routledge.

Bourdieu, P. (1993). *The Field of Cultural Production: Essays on Art and Literature*. Cambridge: Polity Press.

Bourdieu, P. (1984). *Distinction: A Social Critique of the Judgment of Taste.* London: Routledge and Kegan Paul.

Bourdieu, P., Passeron, J.-C. (1973). Cultural Reproduction and Social Reproduction. In: Brown, R. K. (Ed.) *Knowledge, Education and Cultural Change: Papers in the Sociology of Education.* London: Tavistock.

Bösch, S. et al. (2006). Scientific Cultures of Non-Knowledge in the Controversy over Genetically Modified Organisms (GMO). The Cases of Molecular Biology and Ecology. *Gaia,* 15/4. pp. 294-301.

Brier, S., Glanville, R. (2003). Foreword: The Oroborous and the Glass Bead Game. *Cybernetics & Human Knowing. Heinz von Foerster 1911–2002*, 10/3-4. pp. 5-8.

Brockman, J. (Ed.) (1995). *The Third Culture*. 1st Edition New York: Touchstone.

Capra, F. (2002). *The Hidden Connections: A Science for Sustainable Living.* New York: Anchor Books.

Castells, M. (2000). Information Technology and Global Capitalism. In: Hutton, W., Giddens, A. (Eds.) *Global Capitalism.* New York: The New Press. pp. 52-74.

Choo, Chun Wei, Detlor, B., Turnbull, D. (2000). *Web Work. Information Seeking and Knowledge Work on the World Wide Web*. Dordrecht, Boston, London: Kluwer Academic Publishers.

Coggins, D. (2007). Ai Weiwei's Humane Conceptualism. *Art in America,* September. pp. 118-25.

Colonnello, N. (2007). Ai Weiwei—Fairytale. Project for Documenta 12, Kassel, 2007. *Galerie Urs Meile, Beijing–Lucerne*. Available at <http://www.artfacts.net/pdf-files/news/ai%20weiwei%20documenta.pdf> downloaded 21 February 2010.

Collins, D. (1998). Ambiguity and Confusion in the Analysis of the "Knowledge Age". *Journal of Systemic Knowledge Management*, March. Available at <http://www.tlainc.com/article7.htm> downloaded 16 December 2008.

Cotter, H. (2007). Pondering Kassel in some confusion. Documenta 12 makes for quirky viewing. *International Herald Tribune*, 22 June. p. 24.

Dant, T. (2003). *Critical Social Theory*. London: Sage.

Dávila, X., Maturana, H. (2008). Kulturelle Biologie. Bewusstsein und Ethik – Einem neuen psychischen Zeitalter entgegen. *Lettre International. Europas Kulturzeitung*, 81. pp. 200-1.

Davis, Z. (2009). The Commons: A Place for No One, a Place for All. *Environment, Space, Place,* 1, Fall. pp. 103-29.

Dean, M. (1999). *Govermentality. Power and Rule in Modern Society.* London: Sage.

Despres, C., Hiltrop, J.-M. (1995). Human Resource Management in the Knowledge Age: Current Practice and Perspectives on the Future. *Employee Relations*, 17/1. pp. 9-23.

Drucker, P. F. (1991). The New Productivity Challenge. *Harvard Business Review*, November-December. pp. 69-79.

Drucker, P. F. (1979). Managing the knowledge worker. *Modern Office Procedures*, 24. pp. 12-16.

Drucker, P. F. (1973). *Management: Tasks, Responsibilities and Practices.* New York: Harper and Row.

Durkheim, E. (1909; 1982). The Contribution of Sociology to Psychology and Philosophy. In: Lukes, S. (Ed., translated by Halls, W. D.) *The Rules of Sociological Method*. New York: Free Press. pp. 236-40.

Dussel, E. (1993). Eurocentrism and Modernity. *Boundary* 2, 20/3. pp. 65-76.

Dyer, R. (2007). Documenta 12. *Third Text*, 21/6, November. pp. 23-42.

Ellis, A. (2008). The problem with privately funded museums. *The Art Newspaper*, 188. Available at <http://www.theartnewspaper.com/article.asp?id=7509> downloaded 18 June 2008.

Emmeche, C. (2001). Bioinvasion, globalization, and the contingency of cultural biological diversity: Some ecosemiotic observations. *Sign Systems Studies*, 29/1. pp. 237-61.

Farr, G. F. et al. (2000). *Report of the Humanities, Science, and Technology Working Group. National Endowment for the Humanities*. Available at <http://www.nhalliance.org/neh/policy/hst.pdf> downloaded 5 May 2009.

Felt, U., Wynne, B. et al. (2007). *Taking European Knowledge Society Seriously.* Report of the Expert Group on Science and Governance to the Science, Economy and Society Directorate, Directorate-General for Research, European Commission. Luxembourg: Office for Official Publications of the

European Communities. Available at <http://ec.europa.eu/research/science-society/document_library/pdf_06/european-knowledge-society_en.pdf> downloaded 15 October 2010.

Flusser, V. (1990). *Nachgeschichten. Essays, Vorträge, Glossen*. 1st Edition Düsseldorf: Bollmann Verlag.

Foucault, M. (1978). *Dispositive der Macht. Über Sexualität, Wissen und Wahrheit*. Berlin: Merve Verlag.

Foucault, M. (1972). *The Archaeology of Knowledge & The Discourse on Language.* 1st Edition New York: Pantheon Books.

Fuller, S. (1988; 2002). *Social Epistemology*. 2nd Edition Bloomington Indianapolis: Indiana University Press.

Gibbons, M. et al. (1994). *The New Production of Knowledge. The Dynamics of Science and Research in Contemporary Societies*. London: Sage.

Giddens, A., Hutton, W. (2000). Fighting Back. In: Hutton, W., Giddens, A. (Eds.) *Global Capitalism.* New York: The New Press. pp. 213-23.

Gerlis, M. (2008). China overtakes France. *The Art Newspaper*, 188, February. p. 39.

Gogan, J. (2002). The Warhol: Museum as Artist: Creative, Dialogic & Civic Practice. Case Study: Without Sanctuary Project. *Americans for the Arts.* Available at <http://www.americansforthearts.org/AnimatingDemocracy/pdf/labs/andy_warhol_museum_case_study.pdf > downloaded 14 July 2009.

Goleman, D. (2009). *Ecological Intelligence*. New York: Broadway Books.

Gorz, A. (1989). *Critique of Economic Reason*. London, New York: Verso.

Gorz, A. (1982). *Farewell to the Working Class: An Essay on Post-Industrial Socialism*. London: Pluto.

Hacking, I. (1989). *The Taming of Chance*. Cambridge: Cambridge University Press.

Haraway, D. (1997). *Modest_Witness@Second_Millennium.FemaleMan©_Meets_OncoMouse™. Feminism and Technoscience.* New York: Routledge.

Haraway, D., Goodeve, T. N. (1997). How Like a Leaf. A Conversation with Donna Haraway. In: Stocker, G., Schöpf, C. (Eds.) *Fleshfactor. Informationsmaschine Mensch. Ars Electronica Festival 97*. Vienna, New York: Springer. pp. 46-69.

Hardin, G. (1968). The Tragedy of the Commons. *Science,* 162. pp. 1243-248.

Hardt, M., Negri, A. (2009). *Commonwealth*. Cambridge, Massachusetts: The Belknap Press of Harvard University Press.

Hardt, M., Negri, A. (2000). *Empire*. 4th Edition Cambridge, Massachusetts: Harvard University Press.

Harvey, D. (2000). *Spaces of Hope*. Edinburgh: Edinburgh Press.

Harvey, D. (1989). *The Condition of Postmodernity: An Enquiry into the Origins of Cultural Change.* Oxford: Blackwell.

Horkheimer, M., Adorno, T. W. (Schmid Noerr, G., Ed.) (1947; 2002). *Dialectic of Enlightenment. Philosophical Fragments.* Stanford California: Stanford University Press.

Jurybericht (2001). *Besucherzentren in Erstfeld und Pollegio. Projektwettbewerb für Architekten/Architektinnen und Ausstellungsgestalter/-gestalterinnen.* Lucerne: AlpTransit Gotthard AG.

Kallas, S., Truttmann, M. (2010). “Das Schweizer Modell ist ein Traum”. *Neue Luzerner Zeitung*, 238. p. 3.

Kelley, J. (2008). Look Back. Jeff Kelley on Ai Weiwei. *Artforum International,* September. pp. 107-8.

Kelloway, E. K., Barling, J. (2000). Knowledge work as organisational behavior. *International Journal of Management Reviews,* 2/3. pp. 287-304.

Kittler, F. (1993). Die Evolution hinter unserem Rücken. In: Kaiser, G., Matejovski, D., Fedrowitz, J. (Eds.) *Kultur und Technik im 21. Jahrhundert.* Frankfurt a. M., New York: Campus. pp. 221-23.

Kuttner, R. (2000). The Role of Governments in the Global Economy. In: Hutton, W., Giddens, A. (Eds.) *Global Capitalism.* New York: The New Press. pp. 147-63.

Lash, S. (1999). Objects that Judge: Latour’s Parliament of Things. Available at <http://translate.eipcp.net/transversal/0107/lash/en> downloaded 14 August 2009.

Lash, S. (1994). Reflexivity and its doubles: structure, aesthetics, community. In: Beck, U., Giddens, A., Lash, S. *Reflexive Modernization: Politics, Tradition and Aesthetics in the Modern Social Order*. Cambridge: Polity Press.

Latour, B. (2005). From Realpolitik to Dingpolitik or How to Make Things Public. In: Latour, B., Weibel, P. (Ed.) *Making Things Public: Atmospheres of Democracy.* Cambridge Massachusetts, London England: MIT Press. pp. 4-31.

Latour, B. (1999a). *Pandora’s Hope: Essays on the Reality of Science Studies.* Harvard: Harvard University Press.

Latour, B. (1999b). The trouble with actor-network theory. *Collaboratory in Critical Security Methods.* Available at <http://www.cours.fse.ulaval.ca/edc-65804/latour-clarifications.pdf> downloaded 12 February. pp. 1-14.

Latour, B. (1993). *We Have Never Been Modern.* Cambridge, Massachusetts: Harvard University Press.

Latour, B. (1987). *Science in Action.* 11th Edition Cambridge, Massachusetts: Harvard University Press.

Latour, B., Woolgar, S. (1986). *Laboratory Life. The Construction of Scientific Facts*. Princeton: University Press.

Laughlin, R. B. (2008). *The Crime of Reason. And the Closing of the Scientific Mind*. New York: Basic Books.

Law, J. (2009a). Actor Network Theory and Material Semiotics. In: Turner, B. S. (Ed.) *The New Blackwell Companion to Social Theory.* Malden, Massachusetts: Blackwell Publishing Ltd. pp. 141-58.

Law, J. (2009b). *Collateral Realities (Version of 29 December 2009)*. Available at <http://heterogeneities.net/publications/Law2009CollateralRealities.pdf> downloaded 8 February 2011. pp. 1-18.

Lefebvre, H. (1974; 2009). *The Production of Space*. Malden, Massachusetts: Blackwell Publishing.

Leydesdorff, L. (2008). The Communication of Meaning and Knowledge in a Knowledge-Based Economy. *SemiotiX, 13,* October. Available at <http://www.semioticon.com/semiotix/semiotix13/sem-13-02.html> downloaded 25 January 2009.

Liu, A. (2004). *The Laws of Cool*. Chicago and London: The University of Chicago Press.

Longhurst, B. (1998). A New Sociology of Knowledge? *Human Studies*, 21/3. pp. 309-16.

Maasen, S. (1999). *Wissenssoziologie*. 1st Edition Bielefeld: Transcript Verlag.

Mannheim, K. (1936). *Ideology and Utopia.* New York: Harcourt Brace & World.

Massey, D. (2005). *for space*. London: Sage.

Maturana, H., Varela, F. (1987). *The Tree of Knowledge.* Revised Edition Boston: Shambhala Publications.

Mayntz, R., Neidhardt, F., Weingart, P., Wengenroth, U. (Eds.) (2008). *Wissensproduktion und Wissenstransfer. Wissen im Spannungsfeld von Wissenschaft, Politik und Öffentlichkeit.* Bielefeld: Transcript Verlag.

Mäder, M. (2002). Mythos Gotthard. In: Jeker, R. E. (Ed.) *Der längste Tunnel der Welt. Die Zukunft beginnt. Gotthard Basis Tunnel.* Zurich: Werd Verlag. pp.179-97.

McCarthy, D. E. (1996). *Knowledge as Culture. The New Sociology of Knowledge*. London: Routledge.

McDonald, J. (2008). Destruction and creation. *The Sydney Morning Herald*, 17-18 May. pp. 16-17.

McRobbie, A. (2002). Clubs to Companies: Notes on the Decline of Political Culture in Speeded Up Creative Worlds. *Cultural Studies*, 16/4. pp. 516-31.

Merewether, C. (2007). At the Time. In: Meile, U. (Ed.) *Ai Weiwei Works 2004–2007*. Lucerne: Galerie Urs Meile. pp. 173-81.

Miller, P., Rose, N. (1990). Governing Economic Life. *Economy and Society*, 19/1. pp. 1-31.

Mitterer, J. (2001). *Die Flucht aus der Beliebigkeit.* Frankfurt a. M.: Fischer Verlag.

Mitterer, J. (1992). *Das Jenseits der Philosophie.* Vienna: Edition Passagen.

Miyoshi Jager, S. (2007). *On the Uses of Cultural Knowledge*. Carlisle: All Strategic Studies Institute (SSI) Publications.

Münter, U. (2007). Märchen einmal anders. *taz.de.* Available at <http://www.taz.de/?id=archiv&dig=2007/06/11/a0131> downloaded 28 February 2010.

Nagata, A. L. (2004). Promoting Self-Reflexivity in Intercultural Education. *Journal of Intercultural Education,* 8. pp. 139-67.

Negri, T., Petcou, C., Petrescou, D., Querrien, A. (2007). What makes a biopolitical space? A discussion with Toni Negri. *Eurozine.* Available at <http://www.eurozine.com/pdf/2008-01-21-negri-en.pdf> downloaded 26 May 2010.

Nöth, W. (2001). Ecosemiotics and the semiotics of nature. In: Torop, P., Lotman, M., Kull, K. (Eds.) *Sign Systems Studies*, 29/1. Tartu Estonia: Tartu University Press. pp. 71-81.

Nöth, W. (1998). Ecosemiotics. *Sign Systems Studies*, 26. pp. 332-43.

Opie, B. (2001). Cultural Knowledge and the Conceptions of the Knowledge Society. A paper given at the 13th Round Table of the National Scholarly Communications Forum, Canberra, 9 August 2001. Canberra: Humanities Society of New Zealand.

Pakman, M. (2003). Elements for a Foersterian Poetics in Psychotherapeutic Practice. *Cybernetics & Human Knowing. Heinz von Foerster 1911–2002*, 10/3-4. pp. 107-23.

Pepperel, R., Punt, M. (2000). *The Postdigital Membrane. Imagination, Technology and Desire.* 1st Edition Bristol, UK, Portland, OR, US: Intellect Books.

Polanyi, M. (1958). *Personal Knowledge: Towards a Post-Critical Philosophy*. London: Routledge.

Pollack, B. (2008). Making 1,200 Museums Bloom. *Artnews*, 107/3. pp. 123-27.

Pollock, L., Adam, G. (2008). Why the rise of the private museum is rewriting the rules of the market. *The Art Newspaper.* Available at <http://www.taz.de/?id=archiv&dig=2007/06/11/a0131> downloaded 18 June 2008.

Postman, N. (1990). Museum as Dialogue. *Museum News,* 69/5. pp. 55-58.

Puig de la Bellacasa, M. (2011). Matters of care in technoscience: Assembling neglected things. *Social Studies of Science*. 41/1. pp. 85-106.

Raussmüller, C. (2003). Artistic Prestige and the Mores of the Market. *Passages—Passagen. A Swiss Cultural Magazine,* 34, Summer 2003. pp. 19-21.

Reichholf, J. H. (2009). *The Demise of Diversity. Loss and Estinction*. London: Haus Publishing Ltd.

Ringger, R. (2009). Neuer Kompass für die Welt. *Weltwoche,* 26. p. 20.

Ritzer, G. (2007). *The Coming of Post-Industrial Society*. 2nd Edition New York: McGraw-Hill.

Sassen, S. (2008). The World's Third Spaces. *openDemocracy*. Available at <http://www.opendemocracy.net/article/globalisation/world_third_spaces> downloaded 19 February 2010.

Schmid, A. (2008). Chinesische Gegenwartskunst auf der 39. Art Basel. Auf dem Weg in die Selbstverständlichkeit. *Artnet.* Available at <http://www.artnet.de/magazine/news/aschmid/aschmid06-09-08.asp> downloaded 3 March 2010.

Schmid, A. (2007). Chinesische Kunst auf der Documenta 12. Verstellte Kunst. *Artnet.* Available at <http://www.artnet.de/magazine/features/schmid/schmid08-20-07.asp> downloaded 3 March 2010.

Schnieper, W. (2002). Gotthard Chronik. Eine bewegte Geschichte. In: Jeker, R. E. (Ed.) *Der längste Tunnel der Welt. Die Zukunft beginnt. Gotthard Basis Tunnel.* Zurich: Werd Verlag. pp. 146-51.

Schöllhammer, G. (2007). Editorial. In: Documenta and Museum Fridericianum Veranstaltungs-GmbH, Kassel (Eds.) *Documenta Magazine No1, 2007, Modernity?* Cologne: Taschen.

Schön, D. A. (1983). *The reflective practioner*. New York: Basic Books.

Searle, A. (2007). 100 days of ineptitude. *The Guardian*, 19 June. pp. 23-26.

Seefranz, C. (2007a). Ai Weiwei. Fairytale. *Documenta 12, Kassel, 16/06–23/09.* Available at <http://www.artfacts.net/pdf-files/inst/ai%20weiwei%20fairytale%20documenta12-en.pdf> downloaded 21 February 2010.

Seefranz, C. (2007b). Ai Weiwei. Press Release. *Documenta 12, Kassel, 16/06–23/09.* Available at <http://documenta12.de/fileadmin/Ivekovic_11.7/070711_PMAIvekovic_form_en.pdf> downloaded 21 February 2010.

Shanken, E. A. (2003). From Cybernetics to Telematics. The Art, Pedagogy, and Theory of Roy Ascott. In: Shanken, E. A. (Ed.) *Telematic Embrace. Visionary Theories of Art, Technology, and Consciousness. Roy Ascott*. Berkeley, Los Angeles: University of California Press. pp. 1-94.

Shiva, V. (2000). The World on the Edge. In: Hutton, W., Giddens, A. (Eds.) *Global Capitalism.* New York: The New Press. pp. 112-29.

Sloterdijk, P. (2010). Der Mensch, der Athlet. *Tages-Anzeiger*, 6 February. pp. 35-36.

Smith, D. (2007). Made in China. Jennifer Baichwal and Edward Burtynsky on Their Travels Across Manufactured Landscapes. *Bright Lights Film Journal*, 58. Available at

<http://www.brightlightsfilm.com/58/58landscapesiv.html> downloaded 28 February 2009.

Snow, C. P. (1959; 1998). *The Two Cultures*. 9th Edition Cambridge: Cambridge University Press.

Steier, F., Jorgenson, J. (2003). Ethics and Aesthetics of Observing Frames. *Cybernetics & Human Knowing. Heinz von Foerster 1911–2002*, 10/3-4. pp. 124-36.

Steinmann, N., Favre, P. (2003). *Building a Modern Railway Line in the Gotthard Base Tunnel*. Lucerne: AlpTransit Gotthard AG.

Stern, L. E. (2002). The Gene(sis) Project: A Laboratory for Arts-Based Civic Dialogue. Case Study: Henry Art Gallery. *Americans for the Arts*. Available at <http://www.AmericansForTheArts.org/AnimatingDemocracy/pdf/reading_room/henry_art_gallery_case_study.pdf> downloaded 14 June 2009.

Storl, W.-D. (2007). *Borreliose natürlich heilen*. 2nd Edition Baden and Munich: AT Verlag.

Swidler, A., Arditi, J. (1994). The New Sociology of Knowledge. *Annual Review of Sociology*, 20. pp. 305-29.

Swiss Federal Office of Transport (Ed.) (2007). Through the Alps at 280 km/h. *Alptransit. The Future of Rail*, 2, March. pp. 1-2.

Taylor, S., Bogdan, R. (1998). *Introduction to qualitative research methods: A guidebook and resource*. New York: Wiley.

Tinari, P. (2007). A Kind of True Living. *Artforum International,* Summer. pp. 453-59.

Traweek, S. (1988*). Beamtimes and Lifetimes*. Cambridge: Harvard University Press.

Turnbull, D. (2000). *Masons, Tricksters, and Cartographers*. *Comparative Studies in the Sociology of Scientific and Indigenous Knowledge.* Amsterdam: Harwood Academic Publishers.

Unterschütz, P. (2002a). *Besucherzentren in Pollegio und Erstfeld.* AlpTransit Gotthard AG.

Unterschütz, P. (2002b). Schutzpatronin der Bergleute. In: Jeker, R. E. (Ed.) *Der längste Tunnel der Welt. Die Zukunft beginnt. Gotthard Basis Tunnel.* Zurich: Werd Verlag. pp. 157-59.

Vetsch, H.-P. (2002). Lang, länger am längsten. In: Jeker, R. E. (Ed.) *Der längste Tunnel der Welt. Die Zukunft beginnt. Gotthard Basis Tunnel.* Zurich: Werd Verlag. pp.152-56.

Von Foerster, H., Pörksen, B. (1998). *Wahrheit ist die Erfindung eines Lügners. Gespräche für Skeptiker*. Heidelberg: Carl-Auer-Systeme Verlag.

Von Foerster, H. (1993). *KybernEthik*. Berlin: Merve Verlag.

Von Foerster, H. (1984). *Observing systems*. Seaside. California: Intersystems.

Von Foerster, H. (1973). On constructing reality. In: Preiser, F. E. (Ed.) *Environmental design research,* 2. pp. 35-46.

Walsham, G. (1997). Actor-Network Theory and IS Research: Current Status and Future Prospects. In: Allen, S. L., Liebenau, J., DeGross, J. I. (Eds.) *Information Systems and Qualitative Research*. London: Chapman & Hall. pp. 466-79.

Welzer, H. (2008). *Klimakriege. Wofür im 21. Jahrhundert getötet wird.* Frankfurt a. M.: Fischer Verlag.

Wenzel, U. J. (2008). Vermehrung der Denkkulturen. Suhrkamp startet mit der “edition unseld” Expeditionen in das Niemandsland zwischen Natur und Geist. *Neue Zürcher Zeitung*, 93. p. 45.

Wertheim, M. (1997). *Phythagoras’ Trousers. God, Physics, and the Gender Wars*. New York, London: W. W. Norton & Company.

Willke, H. (1998). Organisierte Wissensarbeit. *Zeitschrift für Soziologie*, 27. pp. 161-77.

Wolbring, G. (2009). What next for the human species? Human performance, enhancement, ableism and pluralism. *development dialogue*, 11/52, August. pp.141-61.

Yang Jiechang, Köppel-Yang, M. (2007). René Block's Waterloo: Some Impressions of documenta 12, Kassel. *Yishu. Journal of Chinese Contemporary Art,* 6/4, December. pp. 93-100.

Yuen, C. (2002). The Water Project. Case Study: Northern Lakes Center for the Arts. *Americans for the Arts*. Available at <http://www.americansforthearts.org/AnimatingDemocracy/pdf/labs/water_issues_project_case_study.pdf> downloaded 20 June 2010.

List of Illustrations and Sources

Fig. 1.1 *Economy of Knowledge*. Courtesy: author and Gabi Kopp, Lucerne; 2008.

Fig. 2.1 *Cultural Work and "Cultural Knowledge Work"*. Courtesy: author; 2009.

Fig. 2.2 *InfoCenter Erstfeld,* Gotthard Base Tunnel construction site. Photo: author; 2008.

Fig. 2.3 *The European High-speed Rail Network in 2020*.
Source: The New Gotthard Rail Link (2005). AlpTransit Gotthard Ltd. (Ed.), p. 2.

Fig. 2.4 *Saint Barbara*, InfoCenter Erstfeld, Gotthard Base Tunnel construction site.
Photo: author; 2008.

Fig. 2.5 *William Tell and visitors of the Gotthard Base Tunnel exhibition*, Erstfeld.
Source: <http://besucherzentrum-uri.magix.net> downloaded 12 February 2009.

Fig. 2.6. *Portrayals of Miners*, InfoCenter Erstfeld, Gotthard Base Tunnel construction site.
Photo: author; 2008.

Fig. 2.7, 2.8, 2.9 *InfoCenter Erstfeld*, Gotthard Base Tunnel construction site. Photos: author; 2008.

Fig. 2.10 *A Techno-Socio-Cultural Public Space of Knowledge.* Courtesy: author; 2009.

Fig. 2.11 Source: <http://www.alptransit.ch/de/besuchen-sie-uns/infozentren/> downloaded 12 February 2009. Courtesy: AlpTransit Gotthard Ltd.

Fig. 2.12–2.40 Film Stills from *Manufactured Landscapes*. Courtesy: Jennifer Baichwal, Edward Burtynsky; 2006.

Fig. 2.41 *Post-Industrial Cultural Knowledge Work*. Courtesy: author; 2009.

Fig. 2.42 *The five flights needed to transport the 1,001 Chinese participants of Documenta 12, 2007, to Germany and back to China*. Courtesy: author; 2010.

Fig. 2.43 *Fairytale—1001 Chairs*. Source: <http://www.flickr.com/photos/70839462@N00/2804254754> downloaded 7 March 2010; Courtesy: <http://www.hellokassel.de/>, and Galerie Urs Meile, Beijing–Lucerne; 2007.

Fig. 2.44, 2.45 *Template*, wooden doors and windows from destroyed Ming and Qing Dynasty houses; Source: <http://www.chinesische-gegenwartskunst.de/pages/ausstellungen/ai-weiwei-documenta-12.php> downloaded 7 March 2010. Courtesy: Nadine Dinter, and Galerie Urs Meile, Beijing–Lucerne; 2007.

Fig. 2.46 *The Cultural and Economic Actors behind Fairytale*. Courtesy: author; 2010.

Fig. 2.47 Cover of Ai Weiwei's original project proposal *Fairytales*. Courtesy: Galerie Urs Meile, Beijing–Lucerne, and Ai Weiwei; 2007.

Fig. 2.48 *Fairytale People*. Courtesy: Galerie Urs Meile, Beijing–Lucerne; 2007.

Fig. 2.49 *48 Seiten Kunst Edition*. Cover of Vanity Fair, 24, 2007. Courtesy: Vanity Fair. Ai Weiwei's name is marked in yellow by author.

Fig. 2.50 *48 Seiten Kunst Edition*. Vanity Fair, 24, 2007, p. 18. Courtesy: Vanity Fair. Ai Weiwei posing in a pan for the media in the Fairytale kitchen at Documenta 12, Kassel, Germany, where the meals for the Chinese Fairytale people were prepared.

Fig. 2.51 Source: <http://www.artnet.de/magazine/features/schmid/schmid08-20-07.asp> downloaded 7 March 2010. Courtesy: Andreas Schmid.

Fig. 2.52, 2.53 Source: <http://www.documenta.de/987.html?&L=1> downloaded 7 March 2010. Courtesy: Julia Zimmermann, and Documenta 12, 2007, Kassel, Germany.

Fig. 2.54, 2.55 Film stills from the movie *Fairytale*. Courtesy: Galerie Urs Meile, Beijing–Lucerne, and Ai Weiwei; 2007.

Fig. 2.56 *Shanghai Uni statt Tokio Hotel*. Hessische Allgemeine, 23 June 2007. Courtesy: Wilhelm Ditzel.

Fig. 2.57 *Zum Abschluss Fussball. Ai Weiwei's Chinesen kickten gegen Nordstadtmannschaft*. Hessische Allgemeine, 23 June 2007; Courtesy: Wilhelm Ditzel.

Fig. 2.58 *"Cooking for China": Kreatives Kochen. Teil des Wei Wei-Projektes*. FLZ, 150, 25 June 2007.

Fig. 2.59 *Kunstmarkt extra*. Frankfurter Allgemeine Zeitung, 85, 12 April 2007, p. K4.

Fig. 4.1 *Post-Industrial Cultural Work (Cultural Knowledge Work)*. Courtesy: author; 2010.

Fig. 4.2 *Post-Industrial Cultural Work (Ethics, Aesthetics, Pragmatics, Politics)*. Courtesy: author; 2010.

Fig. 4.3 *Post-Industrial Cultural Work (Language, Reflexivity, Temporality)*. Courtesy: author; 2010.